

NASON
MANUFACTURING
COMPANY



NASON

1842

1917

NASON

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1842
1917

NASON

Established by Joseph Nason in 1842
Incorporated in 1884

Nason Manufacturing Company

Reference Book No. 16

for the

Architect, Mechanical and
Sanitary Engineer



Main Office
Sales Departments and Factory
71 Fulton Street, through to
71 Beekman Street
New York City

Branch Office
Warehouse, Store and Shops
32 to 48 Davis Street
Long Island City
New York

Cable Address: Unitorgan, New York

H. H. Seabrook, President

John Harmon, Vice-President
Arthur DeL. Neal, Secretary
Thomas F. Larkin, Treasurer

Raymond Seabrook, Purchasing Agent
Wm. K. Simpson, M. E., Superintendent
Wm. V. Larkin, Branch Manager

Figure Numbers

Attention is directed to the simplicity of our Figure Number system.

Dropping the final numeral of any figure number immediately indicates the page number.

For example: the celebrated Nason Sidelug Steam Trap is represented by Fig. 2642.

Dropping the final "2" gives you page 264.

Catalogue No. 16

takes its place in our trade history as our most ambitious effort.

Compiled by our own staff, in close and constant touch with the daily requirements of our patrons in all the departments in which we specialize, we have been able to plan and execute a work that we do not hesitate to offer as being both complete and practical.

As an engineering house of many years standing, the subject of appliances for general service and special conditions has been broadly treated.

The sections of our book devoted to steam, ammonia and hydraulics will therefore be found of great value to those interested in modern mechanical engineering.

To those interested in sanitary equipment this edition of our catalogue will prove of special value.

The elaborate groups of fixtures and accessories have been selected by sanitary experts of wide experience and will be found complete for all modern installations.

For the patronage and favors shown us we wish to extend our thanks and express our appreciation.

Nason Manufacturing Company

Telegraphic Code

Shipping Instructions

Mabel.....	Ship via Rail.
Mattie.....	Ship via Steamer.
Julia.....	Ship via Express.
Abase.....	Ship what you have in stock and balance as soon as possible.
Abash.....	Send tracer after shipment of _____.
Abate.....	When will you ship? Wanted badly. Answer by wire.
Abating.....	Ship immediately.

Inquiries

Abess.....	At what price can you furnish _____?	Ablution.....	Have you shipped order _____ inst.?
Abdomen.....	How soon and at what price can you furnish?	Abnormal.....	When will you complete our order?
Abduct.....	Have you in stock and can you furnish?	Abode.....	Can you furnish us promptly?
Abhor.....	How long will it take you to make?	Abound.....	If not already shipped, cancel.
Abhorrence.....	Can you buy for us from stock?	Abram.....	What rate of freight can you obtain to?
Ability.....	How many _____ have you in stock?	Abreast.....	Shipping instructions by mail.
Abjure.....	When will you ship our order?	Abridge.....	If you have not shipped order _____ hold for instructions.
Able.....	When can you ship?		
Ablest.....	Have you shipped us any?		

Replies

Abrogate.....	Particulars go by mail.	Abutment.....	We have already shipped.
Abrupt.....	We are waiting for the _____ shall we ship balance without them?	Abutting.....	We can ship to-day.
Abscind.....	We can furnish at _____	Academy.....	We can ship on _____.
Abscinded.....	_____ advanced to _____.	Accented.....	We can ship on receipt of order.
Abseonding.....	Shall we enter order?	Accenting.....	Deliveries and freight rates.
Absent.....	_____ decline to _____.	Accident.....	F. O. B. our warehouse.
Absolute.....	We have no order.	Accidental.....	F. O. B. Cars _____.
Absolve.....	None of the goods you ordered are in stock.	Acclimate.....	F. O. B. Cars at your city.
Absorbed.....	Impossible for us to fill your order in time specified.	Accomplish.....	F. O. B. Cars at mill.
Absorbing.....	We have in stock and can furnish at _____.	Accounted.....	F. O. B. Cars at mill with freight allowance per 100 lbs. of _____.
Abstain.....	Referring to your order of the _____.	Accuse.....	F. O. B. Cars at mill with freight allowed to make delivery at your city.
Abstinence.....	We expect to ship on the _____.	Accusing.....	The rate of freight per 100 lbs., car lots, from mill to your city is _____.
Abstinent.....	Telegram canceling order was too late; order has been shipped.	Accustom.....	The rate of freight per 100 lbs., less than car lots, from mill to your city, is _____.
Abstruse.....	We have in stock and can ship at once.	Ache.....	The rate of freight per 100 lbs., car lots, from New York to your city, is _____.
Aburdity.....	We can ship part from stock and balance in _____.	Achieve.....	The rate of freight per 100 lbs., less than car lots, from New York to your city, is _____.
Absurdness.....	Your message unintelligible; please repeat.		
Abundance.....	We have none in stock.		
Abundant.....	Referring to your letter of _____.		
Abusing.....	Must have answer by _____.		
Abusive.....	You have not answered our letter of _____.		

To be Used in Quoting Discounts Only

Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
Aching..... 1	Actual..... 13	Adjust..... 26	Adorable..... 38	Affecting..... 51	Affright..... 63	Agitating..... 75
Acorn..... 2	Actually..... 14	Adjusted..... 27	Adoration..... 39	Affection..... 52	Affrighted..... 64	Agitation..... 76
Acquaint..... 2½	Adaline..... 15	Adjusting..... 27½	Adore..... 40	Affiant..... 52½	Affront..... 65	Agony..... 77
Acquainted..... 3	Adamant..... 16	Adjustment..... 28	Adorned..... 41	Affidavit..... 53	Affronted..... 66	Agreeable..... 77½
Acquire..... 4	Addable..... 17	Adjutant..... 29	Adorning..... 42	Affiliate..... 54	Affinity..... 66¾	Agreed..... 78
Acquiring..... 5	Addition..... 17½	Admirable..... 30	Advantage..... 42½	Affinity..... 55	Afraid..... 67	Aground..... 79
Acquit..... 6	Addle..... 18	Admiral..... 31	Adventure..... 43	Affirmable..... 56	Agape..... 67½	Ahead..... 80
Acquittal..... 7	Address..... 19	Admission..... 32	Advertise..... 44	Afflict..... 57	Agate..... 68	Ail..... 82½
Acquitting..... 7½	Adequate..... 20	Admitted..... 33	Advisable..... 45	Afflicted..... 57½	Aged..... 69	Ailment..... 85
Acrobat..... 8	Adhesion..... 21	Admitting..... 33½	Advise..... 46	Afflicting..... 58	Agedly..... 70	Aiming..... 87½
Acting..... 9	Adjacent..... 22	Admix..... 34	Advising..... 47	Affliction..... 59	Agency..... 71	Aimless..... 90
Action..... 10	Adjective..... 22½	Admonish..... 35	Advocate..... 47½	Affluence..... 60	Aggravate..... 72	
Actionable..... 11	Adjourn..... 23	Adopted..... 36	Affable..... 48	Affluent..... 61	Aggregate..... 72½	
Actor..... 12	Adjourned..... 24	Adopting..... 37	Affect..... 49	Afforded..... 62	Aghast..... 73	
Actress..... 12½	Adjudge..... 25	Adoption..... 37½	Affected..... 50	Affording..... 62½	Agitate..... 74	

Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
Ajax..... and 1	Algebra..... and 7½	Algebra..... and 7½	Allotment..... and 10	and 7½ and 2½		
Alabaster..... and 1½	Alienate..... and 7½ and 2½	Alienate..... and 7½ and 2½	Allotted..... and 10	and 7½ and 5		
Alamo..... and 2	Alight..... and 7½ and 5	Alight..... and 7½ and 5	Allotting..... and 10	and 10		
Albino..... and 2½	Alighting..... and 7½ and 7½	Alighting..... and 7½ and 7½	Allowance..... and 10	and 10 and 2½		
Album..... and 2½ and 1	Alkali..... and 8	Alkali..... and 8	Allspice..... and 10	and 10 and 5		
Albumen..... and 3	Alkaline..... and 9	Alkaline..... and 9	Allude..... and 10	and 10 and 7½		
Alchemist..... and 4	Allay..... and 10	Allay..... and 10	Alluding..... and 10	and 10 and 10		
Alcove..... and 5	Allege..... and 10 and 2½	Allege..... and 10 and 2½	Allusion..... and 12½			
Alder..... and 5 and 2½	Allegiance..... and 10 and 5	Allegiance..... and 10 and 5	Almanac..... and 15			
Alderman..... and 5 and 5	Alliance..... and 10 and 5 and 2½	Alliance..... and 10 and 5 and 2½	Almighty..... and 17½			
Alert..... and 6	Allot..... and 10 and 5 and 5	Allot..... and 10 and 5 and 5	Almond..... and 20			
Alertness..... and 7						

To be used with above words when the discount is the fractional part of 1% (one per cent.), thus 65.15% would be Affront, Aloud.

Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
Alms..... 05	Alpaca..... 20	Alum..... 35	Amassed..... 50	Ambition..... 65	Amidst..... 80	Amnesty..... 95
Alloof..... 10	Altar..... 25	Alumni..... 40	Amassing..... 55	Ambush..... 70	Amiss..... 85	
Aloud..... 15	Alternate..... 30	Amalgam..... 45	Amateur..... 60	Amend..... 75	Amity..... 90	

Telegraphic Code

Table Used in Ordering Pipe

Number of Feet	Black,	Size	Galvanized,	Size
25.....	Africa	Allegheny..... $\frac{1}{8}$	Amazon..... $\frac{1}{4}$	
50.....	Alabama	Baltimore..... $\frac{1}{4}$	Bay..... $\frac{3}{8}$	
75.....	Cuba	Camden..... $\frac{3}{8}$	Colorado..... $\frac{1}{2}$	
100.....	Asia	Detroit..... $\frac{1}{2}$	Danube..... $\frac{3}{4}$	
200.....	Belgium	Erie..... $\frac{3}{4}$	Elbe.....1	
300.....	Chili	Fairmount.....1	Firth..... $1\frac{1}{4}$	
400.....	Denmark	Galena..... $1\frac{1}{4}$	Ganges..... $1\frac{1}{2}$	
500.....	Egypt	Harrisburgh..... $1\frac{1}{2}$	Hudson.....2	
600.....	France	Ithaca.....2	Indus..... $2\frac{1}{2}$	
700.....	Germany	Jamestown..... $2\frac{1}{2}$	Juniata.....3	
800.....	Holland	Kensington.....3	Kanawah..... $3\frac{1}{2}$	
900.....	Ireland	Lancaster..... $3\frac{1}{2}$	Lake.....4	
1000.....	Japan	Macon.....4	Miami..... $4\frac{1}{2}$	
1500.....	Jersey	Quincy..... $4\frac{1}{2}$	Nile.....5	
2000.....	Kentucky	Newark.....5	Osage.....6	
2500.....	Kansas	Oncida.....6	Po.....7	
3000.....	Liberia	Paris.....7	Rhine.....8	
3500.....	Lapland	Reading.....8	Seine.....9	
4000.....	Maine	Salem.....9	Tweed.....10	
4500.....	Mexico	Troy.....10	Ural.....12	
5000.....	Nevada	Utica.....11		
6000.....	Ohio	Venice.....12		
7000.....	Peru	Verona.....14		
8000.....	Russia	Wales.....16		
9000.....	Spain			
10000.....	Texas			

Wire Gauge Numbers

Avenge.....	00000	Ballast.....	17
Avenging.....	0000	Ballasted.....	18
Avenue.....	000	Balmoral.....	19
Avoid.....	00	Bamboo.....	20
Avoiding.....	0	Banish.....	21
Avowal.....	1	Bankrupt.....	22
Awaking.....	2	Bantam.....	23
Awarded.....	3	Baptismal.....	24
Awful.....	4	Barefoot.....	25
Awkward.....	5	Bargain.....	26
Awning.....	6	Baritone.....	27
Axis.....	7	Barometer.....	28
Babel.....	8	Baroness.....	29
Baboon.....	9	Baronet.....	30
Backward.....	10	Baseless.....	31
Badge.....	11	Basely.....	32
Baffling.....	12	Basement.....	33
Baggage.....	13	Bashful.....	34
Bailiff.....	14	Basil.....	35
Balcony.....	15	Bassoon.....	36
Baleful.....	16		

Sizes

Bastile..... $\frac{1}{4}$	Behaving..... $\frac{1}{4}$	Beverage.....19	Blissful.....51	Brahmin.....83	Buggy.....115	Caleb.....147	Carmine.....179
Bathe..... $\frac{1}{4}$	Behead..... $\frac{1}{4}$	Bewail.....20	Blister.....52	Brandy.....84	Bulb.....116	Calendar.....148	Carnal.....180
Bathing..... $\frac{1}{4}$	Beheaded..... $\frac{1}{4}$	Bewailing.....21	Blithe.....53	Breach.....85	Bulwer.....117	Calico.....149	Carnival.....181
Baton..... $\frac{1}{4}$	Behold..... $\frac{1}{4}$	Bewilder.....22	Block.....54	Bread.....86	Bungle.....118	Caliph.....150	Carousal.....182
Battalion..... $\frac{1}{4}$	Behoof..... $\frac{1}{4}$	Bible.....23	Blockhead.....55	Breadstuff.....87	Bungling.....119	Calmly.....151	Carpenter.....183
Battery..... $\frac{1}{4}$	Belate..... $\frac{1}{4}$	Biblical.....24	Bloomer.....56	Breaker.....88	Burdock.....120	Calmness.....152	Cartridge.....184
Bawble..... $\frac{1}{4}$	Belfry..... $\frac{1}{4}$	Bigness.....25	Bludgeon.....57	Breakfast.....89	Bureau.....121	Calomel.....153	Casemate.....185
Bayonet..... $\frac{1}{4}$	Belief..... $\frac{1}{4}$	Bigoted.....26	Bluff.....58	Breakspin.....90	Burglar.....122	Calumet.....154	Cashmere.....186
Bear..... $\frac{1}{4}$	Believing..... $\frac{1}{4}$	Bigotry.....27	Bluffing.....59	Breathe.....91	Burial.....123	Cambrie.....155	Castigate.....187
Beadle..... $\frac{1}{4}$	Belong..... $\frac{1}{4}$	Bilge.....28	Blunder.....60	Breeding.....92	Burning.....124	Camped.....156	Castor.....188
Beard..... $\frac{1}{4}$	Beloved..... $\frac{1}{4}$	Binnacle.....29	Bluntley.....61	Brethren.....93	Bursting.....125	Camphor.....157	Casual.....189
Beaten..... $\frac{1}{4}$	Beloving..... $\frac{1}{4}$	Bison.....30	Boasted.....62	Brevet.....94	Busily.....126	Camping.....158	Catacomb.....190
Beauty..... $\frac{1}{4}$	Beneath..... $\frac{1}{4}$	Bitter.....31	Boastful.....63	Brewer.....95	Buskin.....127	Candid.....159	Catching.....191
Becalm..... $\frac{1}{4}$	Benedict..... $\frac{1}{4}$	Bitterly.....32	Bodily.....64	Brewing.....96	Bustle.....128	Candidly.....160	Catchup.....192
Bedaub..... $\frac{1}{4}$	Benefit.....1	Bitumen.....33	Bolivar.....65	Bribery.....97	Button.....129	Candling.....161	Cathartic.....193
Bedeck..... $\frac{1}{4}$	Bengal.....2	Blacking.....34	Bombard.....66	Bribing.....98	Buttress.....130	Canine.....162	Catnip.....194
Bedecking..... $\frac{1}{4}$	Benumb.....3	Blackleg.....35	Bombay.....67	Bride.....99	Buzzard.....131	Cannibal.....163	Caucus.....195
Bedlamite..... $\frac{1}{4}$	Benumbed.....4	Blame.....36	Bondage.....68	Bridewell.....100	Bylaw.....132	Capsize.....164	Caution.....196
Bedrid..... $\frac{1}{4}$	Bequest.....5	Blameable.....37	Bonny.....69	Bridling.....101	Byway.....133	Capstan.....165	Cavalry.....197
Bedside..... $\frac{1}{4}$	Besetting.....6	Blameless.....38	Bonus.....70	Brilliant.....102	Byword.....134	Capsule.....166	Cavern.....198
Bedestead..... $\frac{1}{4}$	Besiege.....7	Blanche.....39	Booby.....71	Brimful.....103	Cabbage.....135	Captain.....167	Cavity.....199
Beech..... $\frac{1}{4}$	Besmar.....8	Blanket.....40	Booming.....72	Brittle.....104	Cabin.....136	Captivate.....168	Cayenne.....200
Befall..... $\frac{1}{4}$	Bespatter.....9	Blanney.....41	Border.....73	Broad.....105	Cabinet.....137	Captivity.....169	Cedar.....250
Befalling..... $\frac{1}{4}$	Bestir.....10	Blasted.....42	Bosom.....74	Brother.....106	Caboose.....138	Caravan.....170	Celebrate.....300
Before..... $\frac{1}{4}$	Bestowed.....11	Bleed.....43	Botanist.....75	Brotherly.....107	Cackling.....139	Carbon.....171	Celestial.....350
Befriend..... $\frac{1}{4}$	Betake.....12	Bleeding.....44	Botany.....76	Brownish.....108	Cadence.....140	Carbonate.....172	Cement.....400
Beget..... $\frac{1}{4}$	Bethink.....13	Blemiah.....45	Bothered.....77	Brownish.....109	Cadet.....141	Carboy.....173	Censure.....450
Begging..... $\frac{1}{4}$	Betimes.....14	Blighted.....46	Bouncing.....78	Bruiise.....110	Cajole.....142	Carcass.....174	Centipede.....500
Beginner..... $\frac{1}{4}$	Betrayal.....15	Blind.....47	Bounty.....79	Brutal.....111	Calabash.....143	Cardinal.....175	Century.....1000
Begotten..... $\frac{1}{4}$	Betraying.....16	Blinded.....48	Bracelet.....80	Bucket.....112	Calamity.....144	Carding.....176	Cinnamon.....2000
Begrudge..... $\frac{1}{4}$	Betrothal.....17	Blinding.....49	Brackish.....81	Buff.....113	Calculate.....145	Careless.....177	Citadel.....3000
Beguile..... $\frac{1}{4}$	Between.....18	Blindfold.....50	Braggart.....82	Buffet.....114	Caldron.....146	Caress.....178	Civilian.....4000

Fractions When Used in Connection With Whole Numbers

Age..... $\frac{1}{8}$	Ed..... $\frac{3}{8}$	Ful..... $\frac{5}{8}$	Ish..... $\frac{7}{8}$	Like..... $\frac{9}{8}$	Ness..... $\frac{11}{8}$	Nate..... $\frac{13}{8}$	Wise..... $\frac{15}{8}$
Able..... $\frac{1}{8}$	Er..... $\frac{1}{4}$	Ing..... $\frac{3}{8}$	Less..... $\frac{1}{2}$	Ly..... $\frac{5}{8}$	Nal..... $\frac{7}{8}$	Ship..... $\frac{9}{8}$	

Add to word for whole number the syllable representing fraction. Example: 135 $\frac{1}{2}$ would be Cabbageless; 27 $\frac{1}{8}$ would be Bigotryful

Specified Quantities

Amongst..... $\frac{1}{8}$	Animal.....12	Apartment.....27	Appraise.....42	Armature.....57	Ashamed.....72	Astonish.....87	Attract.....150
Amorous..... $\frac{1}{4}$	Animated.....13	Aperture.....28	Approach.....43	Armor.....58	Ashore.....73	Astray.....88	Attracted.....175
Ample..... $\frac{1}{2}$	Animation.....14	Apex.....29	Approve.....44	Armpit.....59	Asleep.....74	Astride.....89	Attribute.....200
Amplify..... $\frac{3}{4}$	Ankle.....15	Apollo.....30	Aptness.....45	Army.....60	Aspect.....75	Asunder.....90	Auction.....250
Amulet.....1	Annex.....16	Apology.....31	Arab.....46	Arrange.....61	Assail.....76	Asylum.....91	Audible.....300
Amuse.....2	Announce.....17	Apostle.....32	Arabia.....47	Arrest.....62	Assailed.....77	Athlete.....92	Audience.....350
Anatomy.....3	Antelope.....18	Apparel.....33	Arbitrate.....48	Arrested.....63	Assault.....78	Athletic.....93	Auditing.....400
Ancestor.....4	Anthem.....19	Appeal.....34	Arcade.....49	Arresting.....64	Assaulted.....79	Attain.....94	Auditor.....450
Anew.....5	Antidote.....20	Appealed.....35	Archduke.....50	Arrogant.....65	Assay.....80	Attaining.....95	Aunt.....500
Angel.....6	Antiquated.....21	Appealing.....36	Archives.....51	Arsenal.....66	Assemble.....81	Attempt.....96	Autumn.....750
Angelic.....7	Antique.....22	Appendix.....37	Ardent.....52	Arsenic.....67	Assets.....82	Attentive.....97	Avalanche.....1000
Angling.....8	Antiquity.....23	Applaud.....38	Ardently.....53	Artery.....68	Assign.....83	Attest.....98	Avalon.....1500
Angry.....9	Anxious.....24	Applicant.....39	Argument.....54	Article.....69	Assume.....84	Attire.....99	Avant.....2000
Anguish.....10	Apace.....25	Apply.....40	Arise.....55	Artisan.....70	Assuming.....85	Attitude.....100	Avenge.....2500
Angular.....11	Apart.....26	Appoint.....41	Arising.....56	Artistic.....71	Asthma.....86	Attorney.....125	Average.....3000

Trade Customs

This catalogue supersedes all previous issues.

Catalogue lists and published discounts are subject to market changes.

Unless otherwise agreed, prices submitted by us are for immediate acceptance and subject to change without notice.

All agreements or contracts made by us are subject to conditions beyond our control.

Claims must be made at once. Give complete details, including date and number of invoice.

We will duplicate defective goods or credit them at our invoice price, but under no circumstances are we responsible for any damages beyond the price of the goods, and no charge for labor or expense required to repair defective goods or occasioned by them will be allowed.

Orders entered on our books cannot be countermanded except with our consent, and upon terms that will indemnify us against loss.

Specifications for goods not standard should be explicit and preferably accompanied by sketch or blue print.

No material will be taken back and credited or duplicated unless such arrangement has previously been made.

We assume no responsibility for goods returned without our permission.

The responsibility for goods lost or damaged in transit rests with the carriers, and if customers give a clean receipt where goods are short or damaged they do so at their own risk, as our responsibility ceases when shipments are delivered in good order to the transportation company.

Definite instructions as to routing, insurance, etc., should accompany each order.

Goods will not be insured unless so ordered.

All deliveries are F. O. B. dock, New York, unless otherwise agreed upon.

Terms: Net cash in thirty days, except in cases where special arrangements have been made.

Standard Bell and Spigot Cast Iron Pipe



Fig. 112. Bell and Spigot Pipe

Standard Thickness and Weights of Cast Iron Pipe
Bell and Spigot

All lengths to lay 12 feet. All weights are approximate; those per foot include allowance for bell. All pipe is tested by water pressure. Turned and bored pipe made to order. Quoted on specifications only.

Nominal Inside Diameter Inches	Class A 100 Ft. Head 43 Lbs. Pressure			Class B 200 Ft. Head 86 Lbs. Pressure			Class C 300 Ft. Head 130 Lbs. Pressure			Class D 400 Ft. Head 173 Lbs. Pressure			Approximate Weights		Nominal Inside Diameter Inches
	Thick- ness Inches	Weight per		Thick- ness Inches	Weight per		Thick- ness Inches	Weight per		Thick- ness Inches	Weight per		Lead per Joint Pounds	Hemp per Joint Pounds	
		Foot	Length		Foot	Length		Foot	Length		Foot	Length			
4	.42	20.0	240	.45	21.7	260	.48	23.3	280	.52	25.0	300	5.5	.21	4
6	.44	30.8	370	.48	33.3	400	.51	35.8	430	.55	38.3	460	8.0	.31	6
8	.46	42.9	515	.51	47.5	570	.56	52.1	625	.60	55.8	670	11.5	.44	8
10	.50	57.1	685	.57	63.8	765	.62	70.8	850	.68	76.7	920	14.5	.53	10
12	.54	72.5	870	.62	82.1	985	.68	91.7	1100	.75	100.0	1200	18.0	.61	12
14	.57	89.6	1075	.66	102.5	1230	.74	116.7	1400	.82	129.2	1550	21.5	.81	14
16	.60	108.3	1300	.70	125.0	1500	.80	143.8	1725	.89	158.3	1900	24.0	.94	16
18	.64	129.2	1550	.75	150.0	1800	.87	175.0	2100	.96	191.7	2300	27.0	1.00	18
20	.67	150.0	1800	.80	175.0	2100	.92	208.3	2500	1.03	229.2	2750	31.5	1.25	20
24	.76	204.2	2450	.89	233.3	2800	1.04	279.2	3350	1.16	306.7	3680	37.0	1.50	24
30	.88	291.7	3500	1.03	333.3	4000	1.20	400.0	4800	1.37	450.0	5400	51.0	2.06	30
36	.99	391.7	4700	1.15	454.2	5450	1.36	545.8	6550	1.58	625.0	7500	75.0	3.00	36

Largers sizes to 84-inch quoted on specifications.
Heavier weights for 500, 600, 700 and 800 foot Head can also be furnished in sizes 6 to 36 inches inclusive.

Flanged Water Pipe



Fig. 114. Flanged Cast Iron Pipe

Bell and Spigot and Flanged Cast Iron Pipe and fittings quoted on specifications covering quantities, pressure conditions, etc.

Standard Curves, Bell and Spigot



Fig. 116. Quarter



Fig. 118. Eighth



Fig. 119. Sixteenth

Size, inches	4	6	8	10	12	14	16	18	20	24
1/4 Curves, pounds	82	130	200	278	366	406	594	710	840	1290
1/8 Curves, pounds	66	105	150	202	265	359	445	533	758	1181
1/16 Curves, pounds	66	105	150	202	265	312	388	464	676	1072

Larger sizes and special 1/32 and 1/64 Curves, and Bell and Spigot Offsets, quoted on specification.

Bell and Spigot Fittings



Fig. 120. Two Bell Tee

All weights approximate
Tees, Crosses and Y-Branches
furnished in all reducing sizes



Fig. 121. Three Bell Tee

Two and Three Bell Tees

Size, inches.....	4	6	8	10	12	14	16	18	20	24
Two Bell, pounds.....	125	203	301	414	540	575	729	895	1077	1523
Three Bell, pounds.....	128	200	294	395	512	569	727	889	1070	1503

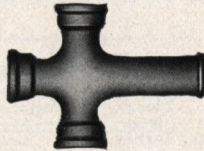


Fig. 122. Three Bell Cross

Three and Four Bell Crosses

Size, inches.....	4	6	8	10	12	14	16	18	20	24
Three Bell, pounds.....	164	259	378	511	651	723	904	1101	1314	1854
Four Bell, pounds.....	166	257	372	498	623	715	901	1096	1307	1834



Fig. 123. Y-Branch

Bell and Spigot Y-Branches

Size, inches.....	4	6	8	10	12	14	16	18	20	24
Weight, pounds.....	103	181	291	434	632	690	967	1358	1725	2600



Fig. 124. Large End Bell



Fig. 125. Small End Bell

Reducers and Increases

Size, inches.....	6x4	8x4	8x6	10x4	10x6	10x8	12x4	12x6	12x8	12x10	14x6	16x10
Spigot Ends, pounds.....	82	104	121	131	150	170	163	181	202	229	194	282
Large End Bell, pounds...	104	132	150	162	180	201	201	218	240	267	249	356
Small End Bell, pounds...	97	119	143	146	169	198	179	202	231	261	216	312



Fig. 126. Sleeve



Fig. 127. Cap



Fig. 128. Plug

Standard Sleeves, Caps and Plugs

Size, inches.....	4	6	8	10	12	14	16	18	20	24
Sleeves, weight, pounds.....	47	68	104	123	174	220	274	321	374	477
Caps, weight, pounds.....	26	40	59	81	104	140	183	226	278	392
Plugs, weight, pounds.....	8	14	24	38	50	63	90	111	151	375



Fig. 129. Flange and Spigot

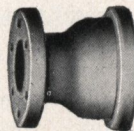


Fig. 129-A. Flange and Bell

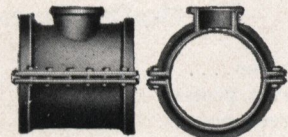


Fig. 129-B. Split Tee

Above specials will be quoted or furnished on specification as to dimensions and pressure conditions.

Boiler Tubes



Fig. 132. Boiler Tube

External Diameter Inches	Steel or Charcoal Iron Per Foot	Seamless Steel Per Foot	Thickness B. W. G. Lap Welded	Thickness Inches	One Extra Wire Gauge Per Foot	Two Extra Wire Gauges Per Foot	Three Extra Wire Gauges Per Foot	Four Extra Wire Gauges Per Foot	Nominal Weight Per Foot Standard Pounds
1	....	.30	13	.095	.35	.38	.42	.45	.917
1 1/4	....	.28	13	.095	.33	.36	.39	.43	1.171
1 1/2	....	.27	13	.095	.32	.34	.38	.42	1.424
1 3/4	.22	.22	13	.095	.26	.28	.31	.34	1.679
2	.21	.21	13	.095	.24	.26	.28	.31	1.932
2 1/4	.24	.24	13	.095	.27	.29	.32	.35	2.186
2 1/2	.30	.30	12	.109	.33	.36	.39	.43	2.783
2 3/4	.34	.34	12	.109	.37	.40	.44	.48	3.074
3	.38	.38	12	.109	.41	.45	.49	.54	3.365
3 1/4	.45	.45	11	.120	.49	.53	.59	.63	4.011
3 1/2	.48	.48	11	.120	.53	.58	.64	.69	4.331
3 3/4	.52	.52	11	.120	.57	.62	.68	.74	4.652
4	.61	.61	10	.134	.66	.73	.79	.88	5.532
4 1/2	.69	.69	10	.134	.75	.83	.89	.99	6.248
5	.81	.81	9	.148	.90	.97	1.08	1.17	7.669
6	1.08	...	8	.165	1.17	1.31	1.41	1.52	10.282
7	1.27	...	8	.165	1.38	1.54	1.66	1.78	12.044
8	1.45	...	8	.165	1.58	1.76	1.90	2.05	13.807

Prices listed are for Lap Welded Boiler Tubes, Steel, Charcoal Iron, and Seamless Drawn Steel. Tubes smaller than 1 3/4 inch are furnished only in Seamless Steel. Tubes more than 4 gauges heavier than standard will be charged per pound.

Standard Wrought Iron Casing

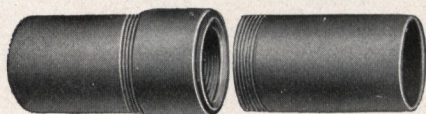


Fig. 133. Sleeve Socket

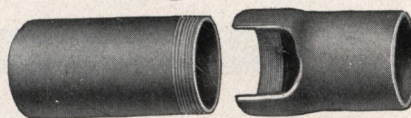


Fig. 134. Inserted Joint

Size	Price per Foot	External Diameter	Internal Diameter	Thickness	Weight Per Foot	Length of Inserted Joint	Diameter of Inserted Joint	Threads per Inch
2	.33	2.250	2.050	.100	2.340	1.250	2.375	14
2 1/4	.33	2.500	2.284	.108	2.820	1.375	2.656	14
2 1/2	.33	2.750	2.524	.113	3.250	1.375	2.937	14
2 3/4	.40	3.000	2.768	.116	3.650	1.375	3.125	14
3	.41	3.250	3.010	.120	4.100	1.375	3.437	14
3 1/4	.46	3.500	3.250	.125	4.600	1.500	3.687	14
3 1/2	.51	3.750	3.492	.129	5.100	1.500	3.937	14
3 3/4	.56 1/2	4.000	3.732	.134	5.650	1.500	4.187	14
4	.62	4.250	3.974	.138	6.200	1.500	4.437	14
4 1/4	.68 1/2	4.500	4.216	.142	6.750	1.500	4.685	14
4 1/2	.74	4.750	4.460	.145	7.250	1.500	5.000	14
4 3/4	.81	5.000	4.696	.152	8.000	1.625	5.250	14
5	.85	5.250	4.944	.153	8.500	1.625	5.500	14
5 1/8	.90	5.500	5.192	.154	9.000	1.625	5.750	14
5 1/4	1.05	6.000	5.672	.164	10.500	1.625	6.312	14
6 1/4	1.20	6.625	6.287	.169	12.000	1.750	6.937	14
6 5/8	1.35	7.000	6.652	.174	13.000	1.750	7.312	14
7 1/4	1.48	7.625	7.263	.181	14.750	1.750	7.877	14
7 5/8	1.60	8.000	7.628	.186	16.000	2.000	8.375	11 1/2
8 1/4	1.75	8.625	8.249	.188	17.500	2.000	9.000	11 1/2
8 5/8	1.90	9.000	8.608	.196	19.000	2.000	9.375	11 1/2
9 5/8	2.28	10.000	9.582	.209	22.750	2.375	10.375	11 1/2
10 5/8	2.68	11.000	10.552	.224	26.750	2.375	11.375	11 1/2
11 5/8	3.15	12.000	11.514	.243	31.500	2.375	12.375	11 1/2
12 1/2	3.65	13.000	12.482	.259	36.500	2.375	13.384	11 1/2
13 1/2	4.20	14.000	13.448	.276	42.000	2.375	14.418	11 1/2
14 1/2	4.75	15.000	14.418	.291	47.500	2.375	15.448	11 1/2
15 1/2	5.25	16.000	15.396	.302	52.500	2.375	16.470	11 1/2

Furnished with threads and couplings and in random lengths, unless otherwise ordered. Thickness of walls make it impracticable to cut threads of coarser pitch than shown on table. All weights given in pounds. All dimensions given in inches. For cut lengths, an extra charge will be made above random. For Galvanized or Coated Casing an extra charge will be made above Black.

Price List Wrought Iron and Steel Pipe



Prices per Foot, Black and Galvanized

Nominal Inside Diameter	Standard		Extra Strong		Double Extra Strong	
	Price per Foot	Nominal Weight Per Foot	Price per Foot	Nominal Weight Per Foot	Price per Foot	Nominal Weight Per Foot
1/8	.05 1/2	0.24	.12	0.31	....	.....
1/4	.06	0.42	.07 1/2	0.53	....	.....
3/8	.06	0.56	.07 1/2	0.73	....	.....
1/2	.08 1/2	0.85	.11	1.08	.32	1.71
3/4	.11 1/2	1.13	.15	1.47	.35	2.44
1	.17	1.68	.22	2.17	.37	3.65
1 1/4	.23	2.28	.30	2.99	.52 1/2	5.21
1 1/2	.27 1/2	2.73	.36 1/2	3.63	.65	6.40
2	.37	3.67	.50 1/2	5.02	.91	9.02
2 1/2	.58 1/2	5.81	.77	7.66	1.37	13.69
3	.76 1/2	7.61	1.03	10.25	1.86	18.58
3 1/2	.92	9.20	1.25	12.50	2.30	22.85
4	1.09	10.88	1.50	14.98	2.76	27.54
4 1/2	1.27	12.64	1.80	17.61	3.26	32.53
5	1.48	14.81	2.08	20.77	3.86	38.55
6	1.92	19.18	2.86	28.57	5.32	53.16
7	2.38	23.76	3.81	38.04	6.35	63.07
8	2.50	25.00	....	....	....	.....
8	2.88	28.80	4.34	43.38	7.25	72.42
9	3.45	34.18	4.90	48.72	....	.....
10	3.50	35.00	....	....	....	.....
10	4.12	41.13	5.48	54.73	....	.....
12	4.50	45.00	....	....	....	.....
12	5.07	50.70	6.55	65.41	....	.....

Note: It is a trade custom to furnish Steel Pipe unless "Genuine" or "Guaranteed Wrought Iron Pipe" is specified.
We follow this rule in all cases.

For complete dimensions and other details, see page 15.

Large O. D. Pipe, Plain Ends

Outside Diameter of Pipe Inches	1/4 Inch Thick Price per Foot	5/16 Inch Thick Price per Foot	3/8 Inch Thick Price per Foot	7/16 Inch Thick Price per Foot	1/2 Inch Thick Price per Foot	5/8 Inch Thick Price per Foot	3/4 Inch Thick Price per Foot	7/8 Inch Thick Price per Foot
14	3.68	4.57	5.46	6.34	7.21	8.08	8.93	10.62
15	3.94	4.91	5.86	6.81	7.75	8.68	9.60	11.42
16	4.21	5.24	6.26	7.28	8.28	9.28	10.27	12.22
17	4.48	5.57	6.66	7.74	8.82	9.88	10.94	13.02
18	4.74	5.91	7.06	8.21	9.35	10.48	11.60	13.82
20	.....	6.58	7.86	9.15	10.42	11.68	12.94	15.42
21	.....	6.91	8.27	9.61	10.95	12.28	13.61	16.23
22	.....	7.24	8.67	10.08	11.49	12.88	14.27	17.03
24	.....	.....	9.47	11.01	12.55	14.09	15.61	18.63
26	.....	.....	10.27	11.95	13.62	15.29	16.94	20.23
28	.....	.....	.....	12.88	14.69	16.49	18.28	21.83
30	.....	.....	.....	13.82	15.76	17.69	19.61	23.43

For table of weights of large O. D. Pipe, see page 15.

On orders for 8-inch, 10-inch, 12-inch pipe, customers should always indicate which weight is wanted.

When Standard Pipe is ordered, black pipe, random lengths, with threads and couplings, will be shipped, unless otherwise specified.

For pipe smoothed on the inside, known as plugged and reamed, an extra charge will be made above regular pipe.

Extra Strong and Double Extra Strong Pipe will be shipped in random lengths and plain ends, unless otherwise ordered. For this pipe, fitted with threads and couplings, an extra charge will be made above regular. For cut lengths of any pipe an extra charge will be made above random lengths. For galvanized or asphalted pipe an extra charge will be made above black.

For Price List for Cutting and Threading, see page 21.

Table of Dimensions Wrought Iron or Steel Pipe



Nominal Inside Diameter Inches	Actual Outside Diameter Inches	Approximate Inside Diameter Inches	Approximate Thickness Inches	Length Pipe per Square Foot of Outside Surface Feet	Inside Area Inches	Length of Pipe Containing One Cubic Foot, Feet	Nominal Weight per Foot Pounds	Number of Threads per Inch of Screw	Contents in U. S. Gallons per Foot
$\frac{1}{8}$	.405	.269	.068	9.44	.0568	2513.	.24	27	.0006
$\frac{1}{4}$	.54	.364	.088	7.075	.1041	1383.3	.42	18	.0026
$\frac{3}{8}$	.675	.493	.091	5.657	.1909	751.5	.56	18	.0057
$\frac{1}{2}$	.84	.622	.109	4.547	.3039	472.4	.85	14	.0102
$\frac{3}{4}$	1.05	.824	.113	3.637	.5333	270.	1.13	14	.0230
1	1.315	1.049	.133	2.903	.8609	166.9	1.68	11 $\frac{1}{2}$	.0408
$1\frac{1}{4}$	1.66	1.380	.140	2.301	1.496	96.25	2.28	11 $\frac{1}{2}$	.0638
$1\frac{1}{2}$	1.90	1.610	.145	2.010	2.038	70.65	2.73	11 $\frac{1}{2}$	.0918
2	2.375	2.067	.154	1.608	3.355	42.91	3.67	11 $\frac{1}{2}$	.1632
$2\frac{1}{2}$	2.875	2.469	.203	1.328	4.780	30.11	5.81	8	.2550
3	3.50	3.068	.216	1.091	7.388	19.49	7.61	8	.3673
$3\frac{1}{2}$	4.00	3.548	.226	.955	9.887	14.56	9.20	8	.4998
4	4.50	4.026	.237	.849	12.730	11.31	10.88	8	.6528
$4\frac{1}{2}$	5.00	4.506	.247	.765	15.961	9.03	12.64	8	.8263
5	5.563	5.047	.258	.687	19.985	7.20	14.81	8	1.020
6	6.625	6.065	.280	.577	28.886	4.98	19.18	8	1.469
7	7.625	7.023	.301	.501	38.743	3.72	23.76	8	1.999
8	8.625	8.071	.277	.444	51.187	2.81	25.00	8	2.659
8	8.625	7.981	.322	.444	50.021	2.88	28.80	8	2.611
9	9.625	8.941	.342	.397	62.722	2.29	34.18	8	3.300
10	10.75	10.136	.307	.355	80.715	1.78	35.00	8	4.190
10	10.75	10.020	.365	.355	78.822	1.82	41.13	8	4.081
12	12.75	12.090	.330	.299	114.875	1.25	45.00	8	5.967
12	12.75	12.000	.375	.299	113.098	1.270	50.76	8	5.870

Table of Dimensions Extra and Double Extra Heavy Pipe



Extra Heavy Pipe

Size	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Actual Outside Diameter	0.405	0.54	0.675	0.84	1.05	1.315	1.66	1.90	2.375
Nominal Inside Diameter	0.205	0.294	0.421	0.542	0.736	0.951	1.272	1.494	1.933
Thickness	0.100	0.123	0.127	0.149	0.157	0.182	0.194	0.203	0.221
Nominal Weight per foot	.29	.54	.74	1.09	1.39	2.17	3.00	3.63	5.02
Size	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6	7	8
Actual Outside Diameter	2.875	3.50	4.00	4.50	5.00	5.563	6.625	7.625	8.625
Nominal Inside Diameter	2.315	2.892	3.358	3.818	4.280	4.813	5.750	6.625	7.625
Thickness	0.280	0.304	0.321	0.341	0.360	0.375	0.437	0.500	0.500
Nominal Weight per foot	7.67	10.25	12.47	14.97	18.22	20.54	28.58	37.67	43.00



Double Extra Heavy Pipe

Size	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6	7	8
Actual Outside Diam.	0.84	1.05	1.315	1.66	1.90	2.375	2.875	3.50	4.00	4.50	5.00	5.563	6.625	7.625	8.625
Nominal Inside Diam.	.244	.422	.587	.885	1.088	1.491	1.755	2.284	2.716	3.136	3.564	4.063	4.875	5.875	6.875
Thickness	.298	.314	.364	.388	.406	.442	.560	.608	.642	.682	.718	.750	.875	.875	.875
Nominal Weight per ft.	1.70	2.44	3.65	5.20	6.40	9.02	13.68	18.56	22.75	27.48	32.53	38.12	53.11	62.38	71.62

Large Outside Diameter Pipe—Approximate Weights

Outside Diameter of Pipe Inches	$\frac{1}{4}$ Inch Thick Weight per Foot Pounds	$\frac{3}{8}$ Inch Thick Weight per Foot Pounds	$\frac{1}{2}$ Inch Thick Weight per Foot Pounds	$\frac{5}{8}$ Inch Thick Weight per Foot Pounds	$\frac{3}{4}$ Inch Thick Weight per Foot Pounds	$\frac{7}{8}$ Inch Thick Weight per Foot Pounds	1 Inch Thick Weight per Foot Pounds	1 $\frac{1}{4}$ Inch Thick Weight per Foot Pounds	1 $\frac{1}{2}$ Inch Thick Weight per Foot Pounds
14	36.71	45.68	54.56	63.37	72.09	80.72	89.27	106.00	162.00
15	39.38	49.02	58.57	68.04	77.43	86.73	95.95	114.00	170.00
16	42.05	52.35	62.57	72.71	82.77	92.74	102.62	122.00	186.00
17	44.72	55.69	66.58	77.38	88.11	98.74	109.30	130.00	202.00
18	47.39	59.03	70.58	82.06	93.45	104.75	115.97	138.00	218.00
20	57.00	65.70	78.59	91.40	104.13	116.77	129.33	154.00	234.00
21	59.20	69.04	82.60	96.07	109.47	122.78	136.00	162.00	240.00
22	62.60	72.38	86.60	100.75	114.81	128.78	142.68	170.00	246.00
24	68.00	85.00	94.61	110.09	125.49	140.80	156.03	186.00	252.00
26	74.00	93.00	102.62	119.44	136.17	152.81	169.38	202.00	258.00
28	80.00	100.00	120.00	128.78	146.85	164.83	182.73	218.00	264.00
30	85.00	107.00	128.00	138.13	157.53	176.84	196.08	234.00	270.00

Cold Drawn Steel Tubes



Fig. 162. Cold Drawn Steel Tube

Price List Per Foot

Outside Diameter in Inches

B. W. Gauge	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 1/2	1 3/4	1 5/8	1 7/8	2
24	.022	.09	.09	.11	.14	.16	.18	.18	.21	.21	.23	.25	.25	.28
22	.028	.09	.09	.11	.14	.16	.18	.18	.21	.21	.23	.25	.25	.28
20	.035	.09	.09	.11	.14	.16	.18	.18	.21	.21	.23	.25	.25	.28
18	.049	.09	.09	.11	.14	.16	.18	.18	.21	.21	.23	.25	.25	.28
17	.058	.12	.12	.15	.19	.22	.25	.25	.28	.28	.32	.35	.35	.38
16	.065	.15	.15	.20	.24	.28	.33	.33	.37	.37	.41	.46	.46	.50
14	.083	.19	.19	.24	.30	.35	.42	.42	.46	.46	.52	.57	.57	.63
13	.095	.22	.22	.27	.33	.38	.45	.45	.52	.52	.59	.65	.65	.71
12	.109	.25	.25	.30	.36	.42	.49	.49	.57	.57	.65	.71	.71	.78
11	.120	.28	.28	.33	.40	.47	.55	.55	.63	.63	.72	.80	.80	.88
10	.134	.31	.31	.37	.44	.52	.61	.61	.70	.70	.80	.89	.89	.98
9	.156	.35	.35	.42	.50	.59	.68	.68	.78	.78	.89	.102	.102	.112
8	.188	.40	.40	.48	.57	.67	.77	.77	.88	.88	.100	.112	.112	.122
7	.219	.45	.45	.54	.64	.75	.86	.86	.98	.98	.110	.122	.122	.132
6	.250	.50	.50	.60	.71	.82	.94	.94	.106	.106	.118	.130	.130	.140
5	.313	.55	.55	.66	.78	.90	.102	.102	.114	.114	.126	.138	.138	.150
4	.375	.60	.60	.72	.84	.97	.110	.110	.122	.122	.134	.146	.146	.158
3	.500	.65	.65	.78	.91	.104	.117	.117	.129	.129	.141	.153	.153	.165
2	.625	.70	.70	.84	.98	.112	.126	.126	.138	.138	.150	.162	.162	.174

Price List Per Foot

Outside Diameter in Inches

B. W. Gauge	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4	4	4 1/4	4 1/2	4 3/4	5	5 1/2
16	.065	.76	.85	.93	.107	.118	.129	.140	.151	.162	.173	.184
14	.083	.96	.107	.118	.130	.141	.152	.163	.174	.185	.196	.207
13	.095	1.10	.122	.133	.144	.155	.166	.177	.188	.199	.210	.221
12	.109	1.25	.139	.150	.161	.172	.183	.194	.205	.216	.227	.238
11	.120	1.37	.153	.164	.175	.186	.197	.208	.219	.230	.241	.252
10	.134	1.52	.170	.181	.192	.203	.214	.225	.236	.247	.258	.269
9	.156	1.75	.196	.207	.218	.229	.240	.251	.262	.273	.284	.295
8	.188	2.07	.232	.243	.254	.265	.276	.287	.298	.309	.320	.331
7	.219	2.37	.266	.277	.288	.299	.310	.321	.332	.343	.354	.365
6	.250	2.67	.300	.311	.322	.333	.344	.355	.366	.377	.388	.399
5	.313	3.25	.365	.376	.387	.398	.409	.420	.431	.442	.453	.464
4	.375	3.75	.427	.438	.449	.460	.471	.482	.493	.504	.515	.526
3	.500	4.67	.534	.545	.556	.567	.578	.589	.600	.611	.622	.633
2	.625	5.42	.625	.636	.647	.658	.669	.680	.691	.702	.713	.724
1	1.000	7.50	.750	.761	.772	.783	.794	.805	.816	.827	.838	.849

Cold Drawn Steel Tubing in Pipe Sizes

Standard, Extra Strong and Double Extra Strong

Size, inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Standard Pipe, per foot	.15	.24	.33	.45	.59	.89	1.33	1.54	1.96	2.25	3.83	5.32	6.16
Extra Strong Pipe, per foot	.22	.33	.44	.60	.94	1.57	2.00	2.34	3.00	4.48	5.32	7.00	8.65
Double Extra Strong Pipe, per foot	.22	.33	.44	.60	.94	1.57	2.00	2.34	3.00	4.48	5.32	7.00	8.65

Spiral Riveted Galvanized Pressure Pipe

In Standard 20-foot Lengths

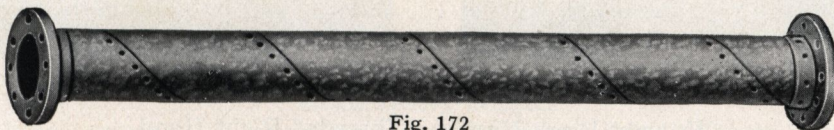


Fig. 172

Spiral Riveted Pressure Pipe

Size	Thickness B. W. Gauge	Approximate Bursting Pressure in Pounds per Sq. In.	Plain End Pipe per 100 Feet	With Flanges Bolts and Gaskets per 100 Feet	Size	Thickness B. W. Gauge	Approximate Bursting Pressure in Pounds per Sq. In.	Plain End Pipe per 100 Feet	With Flanges Bolts and Gaskets per 100 Feet
3	20	1325	45.00	55.30	12	14	790	258.80	305.00
4	20	1000	59.00	72.30	13	14	730	276.90	337.00
5	18	1100	81.70	97.00	14	14	675	299.50	365.60
6	16	1220	108.30	128.65	15	14	630	322.90	400.25
7	16	1060	124.30	149.80	16	14	590	348.60	442.20
8	16	945	143.50	172.10	18	12	690	492.30	602.00
9	16	820	164.90	200.55	20	12	620	546.20	667.25
10	14	945	207.40	246.60	22	12	565	590.00	759.70
11	14	860	220.30	264.30	24	12	515	640.90	820.10

Gauges quoted are Spiral Pipe Standard. Heavier gauges quoted on specification.

Asphalted Pressure Pipe quoted on application.

All prices and weights are figured per 100 lineal feet, in 5 standard 20-foot lengths and with four complete joints. Shorter lengths and additional joints increase the price. Larger sizes quoted on specification.

Galvanized Cast Iron Flanged Fittings

For Spiral Riveted Pipe

Size	90°		45°	Crosses and		Spiral Riveted Standard Bolts and Gaskets	A.S.M.E. Bolts and Gaskets	Spiral Riveted Standard			A. S. M. E. O. D. and Drilling			
	Elbows	Elbows		Tees	Y-Branches			Reducers	Flanges Loose	Flanges Attached	Discs Blank	Flanges Loose	Flanges Attached	Discs Blank	Extra for Facing
3	2.25	2.20	3.21	5.46	.....	.34	.45	.54	.87	.57	.79	1.12	.82	.60
4	2.80	2.75	4.10	6.81	5.45	.60	.75	.73	1.06	.76	1.10	1.43	1.13	.65
5	3.75	3.65	5.37	8.60	6.55	.64	.85	.91	1.25	.95	1.37	1.70	1.40	.70
6	5.05	4.90	7.20	10.30	8.35	.75	1.00	1.10	1.71	1.43	1.62	2.23	1.95	.75
7	6.45	6.20	9.25	13.95	11.00	.84	1.20	1.28	2.20	1.87	2.00	2.92	2.60	.85
8	8.50	8.15	12.20	18.05	12.85	.89	1.32	1.45	2.50	2.18	2.20	3.25	2.90	.95
9	11.30	10.90	16.40	22.50	16.60	1.03	1.53	1.92	3.15	2.80	2.73	3.96	3.60	1.05
10	12.85	12.40	19.80	26.85	18.75	1.10	1.68	2.23	3.50	3.11	3.20	4.47	4.10	1.15
11	16.35	15.90	24.30	33.30	22.25	1.37	2.03	2.41	4.00	3.89	3.70	5.30	5.20	1.25
12	18.70	16.75	27.20	39.40	25.20	1.45	2.18	2.56	4.50	4.64	4.30	6.25	5.75	1.40
13	24.12	17.80	32.40	47.00	28.00	1.50	2.27	2.88	5.40	5.39	4.80	7.30	7.30	1.55
14	27.65	20.80	38.80	58.35	31.70	1.85	2.70	3.20	5.85	6.40	5.30	7.95	8.50	1.75
15	31.65	24.55	46.65	70.65	33.85	1.97	2.90	3.84	6.94	7.55	6.20	9.30	9.90	1.95
16	39.40	29.35	58.35	85.80	38.10	2.44	3.45	5.18	8.46	8.70	7.20	10.45	10.70	2.15
18	50.15	39.60	84.15	100.50	46.20	3.38	4.50	5.94	9.57	11.30	7.80	11.45	13.15	2.40
20	65.30	50.00	111.30	133.70	54.00	3.58	4.75	6.55	10.60	14.15	8.95	13.00	16.55	2.60
22	87.10	67.40	126.00	168.00	.....	4.15	5.40	10.67	15.40	18.30	12.70	17.40	20.30	2.85
24	108.30	83.25	178.60	202.40	.....	4.20	5.55	11.43	16.70	21.75	13.60	18.90	23.95	3.15

Black Flanged Fittings quoted on specification.

Wrought Nipples

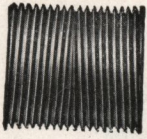


Fig. 182. Close

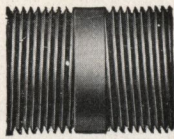


Fig. 184. Short



Fig. 186. Long

Wrought Black Nipples—Threaded Right Hand

Length in Inches						Sizes	Prices		Prices of Extra Long Nipples. Lengths in Inches											
Close	Short	Long					Close or Short	Long	4	5	6	7	8	9	10	11	12			
$\frac{3}{4}$	$1\frac{1}{2}$	2,	$2\frac{1}{2}$,	3,	$3\frac{1}{2}$	$\frac{1}{8}$	.04	.06	.07	.08	.10	.12	.14	.15	.17	.18	.19			
$\frac{7}{8}$	$1\frac{1}{2}$	2,	$2\frac{1}{2}$,	3,	$3\frac{1}{2}$	$\frac{1}{4}$	.04	.06	.07	.08	.10	.12	.14	.15	.17	.18	.19			
1	$1\frac{1}{2}$	2,	$2\frac{1}{2}$,	3,	$3\frac{1}{2}$	$\frac{3}{8}$	.04	.06	.07	.08	.10	.12	.14	.15	.17	.18	.19			
$1\frac{1}{8}$	$1\frac{1}{2}$	2,	$2\frac{1}{2}$,	3,	$3\frac{1}{2}$	$\frac{1}{2}$	.05	.07	.08	.10	.12	.14	.16	.18	.20	.22	.23			
$1\frac{3}{8}$	2	$2\frac{1}{2}$,	3,	$3\frac{1}{2}$,	4	$\frac{3}{4}$	.06	.09	...	.11	.13	.17	.18	.20	.22	.24	.26			
$1\frac{1}{2}$	2	$2\frac{1}{2}$,	3,	$3\frac{1}{2}$,	4	1	.08	.13	...	.15	.18	.23	.25	.28	.31	.34	.36			
$1\frac{5}{8}$	$2\frac{1}{2}$	3,	$3\frac{1}{2}$,	4,	$4\frac{1}{2}$	$1\frac{1}{4}$	.11	.17	...	.20	.24	.29	.33	.36	.40	.44	.47			
$1\frac{3}{4}$	$2\frac{1}{2}$	3,	$3\frac{1}{2}$,	4,	$4\frac{1}{2}$	$1\frac{1}{2}$	.13	.20	...	.25	.29	.36	.40	.45	.50	.54	.59			
2	$2\frac{1}{2}$	3,	$3\frac{1}{2}$,	4,	$4\frac{1}{2}$	2	.18	.27	...	.32	.38	.50	.54	.59	.65	.72	.77			
$2\frac{1}{2}$	3	$3\frac{1}{2}$,	4,	$4\frac{1}{2}$,	5	$2\frac{1}{2}$	.39	.59	...	...	.68	.90	.97	1.06	1.17	1.26	1.35			
$2\frac{1}{2}$	3	$3\frac{1}{2}$,	4,	$4\frac{1}{2}$,	5	3	.48	.72	...	...	.85	1.08	1.20	1.33	1.45	1.58	1.70			
$2\frac{3}{4}$	4	$4\frac{1}{2}$,	5,	$5\frac{1}{2}$,	6	$3\frac{1}{2}$	.75	1.05	...	...	...	1.30	1.45	1.60	1.75	1.90	2.05			
3	4	$4\frac{1}{2}$,	5,	$5\frac{1}{2}$,	6	4	.85	1.20	...	...	...	1.52	1.69	1.87	2.05	2.22	2.40			
3	4	$4\frac{1}{2}$,	5,	$5\frac{1}{2}$,	6	$4\frac{1}{2}$	1.25	1.70	...	...	...	2.25	2.50	2.75	2.95	3.17	3.40			
$3\frac{1}{2}$	$4\frac{1}{2}$	5,	$5\frac{1}{2}$,	6,	$6\frac{1}{2}$	5	1.55	2.45	...	...	...	2.58	2.83	3.10	3.35	3.60	3.85			
$3\frac{1}{2}$	$4\frac{1}{2}$	5,	$5\frac{1}{2}$,	6,	$6\frac{1}{2}$	6	1.85	2.90	...	...	...	3.05	3.35	3.70	4.00	4.30	4.65			
4	5	6				7	3.20	3.60	...	...	...	4.05	4.45	4.90	5.30	5.75	6.15			
4	5	6				8	3.55	4.05	...	...	...	4.55	5.05	5.50	6.00	6.50	7.00			
5	6	8				9	5.25	6.50	...	...	...	...	...	7.10	7.75	8.40	9.00			
5	6	8				10	6.75	8.25	...	...	...	...	...	8.90	9.70	10.40	11.15			
5	6	8				12	8.00	10.00	...	...	...	...	...	10.80	11.75	12.70	13.65			

Wrought Black Nipples—Threaded Right and Left

Length in Inches						Sizes	Prices		Prices of Extra Long Right and Left Nipples.								Lengths in Inches			
Close	Short	Long					Close or Short	Long	4	5	6	7	8	9	10	11	12			
$\frac{3}{4}$	$1\frac{1}{2}$	2,	$2\frac{1}{2}$,	3,	$3\frac{1}{2}$	$\frac{1}{8}$	.05	.08	.09	.11	.13	.16	.18	.20	.23	.25	.27			
$\frac{7}{8}$	$1\frac{1}{2}$	2,	$2\frac{1}{2}$,	3,	$3\frac{1}{2}$	$\frac{1}{4}$	.05	.08	.09	.11	.13	.16	.18	.20	.23	.25	.27			
1	$1\frac{1}{2}$	2,	$2\frac{1}{2}$,	3,	$3\frac{1}{2}$	$\frac{3}{8}$	.05	.08	.09	.11	.13	.16	.18	.20	.23	.25	.27			
$1\frac{1}{8}$	$1\frac{1}{2}$	2,	$2\frac{1}{2}$,	3,	$3\frac{1}{2}$	$\frac{1}{2}$	.07	.10	.11	.13	.16	.18	.21	.24	.27	.29	.31			
$1\frac{3}{8}$	2	$2\frac{1}{2}$,	3,	$3\frac{1}{2}$,	4	$\frac{3}{4}$	.08	.12	...	.15	.17	.23	.25	.27	.29	.32	.35			
$1\frac{1}{2}$	2	$2\frac{1}{2}$,	3,	$3\frac{1}{2}$,	4	1	.11	.18	...	.20	.24	.31	.33	.37	.41	.45	.48			
$1\frac{5}{8}$	$2\frac{1}{2}$	3,	$3\frac{1}{2}$,	4,	$4\frac{1}{2}$	$1\frac{1}{4}$	.15	.23	...	.27	.32	.39	.45	.50	.55	.60	.65			
$1\frac{3}{4}$	$2\frac{1}{2}$	3,	$3\frac{1}{2}$,	4,	$4\frac{1}{2}$	$1\frac{1}{2}$	.18	.27	...	.34	.39	.48	.52	.60	.67	.72	.80			
2	$2\frac{1}{2}$	3,	$3\frac{1}{2}$,	4,	$4\frac{1}{2}$	2	.24	.36	...	.43	.51	.67	.72	.80	.87	.96	1.03			
$2\frac{1}{2}$	3	$3\frac{1}{2}$,	4,	$4\frac{1}{2}$,	5	$2\frac{1}{2}$	.52	.79	...	...	.91	1.20	1.30	1.40	1.55	1.68	1.80			
$2\frac{1}{2}$	3	$3\frac{1}{2}$,	4,	$4\frac{1}{2}$,	5	3	.65	.96	...	...	1.13	1.44	1.60	1.77	1.93	2.10	2.27			
$2\frac{3}{4}$	4	$4\frac{1}{2}$,	5,	$5\frac{1}{2}$,	6	$3\frac{1}{2}$	1.00	1.40	...	...	...	1.75	1.95	2.15	2.35	2.55	2.75			
3	4	$4\frac{1}{2}$,	5,	$5\frac{1}{2}$,	6	4	1.15	1.60	...	...	...	2.00	2.25	2.50	2.75	3.00	3.25			

Add 60 per cent. to above prices for galvanized nipples threaded right and left.

Wrought Galvanized Nipples—Threaded Right Hand

Length in Inches						Sizes	Prices			Prices of Extra Long Galvanized Nipples.								Lengths in Inches		
Close	Short	Long					Close or Short	Long	4	5	6	7	8	9	10	11	12			
$\frac{3}{4}$	$1\frac{1}{2}$	2,	$2\frac{1}{2}$,	3,	$3\frac{1}{2}$	$\frac{1}{8}$	.06	.11	.12	.15	.17	.21	.24	.26	.29	.31	.34			
$\frac{7}{8}$	$1\frac{1}{2}$	2,	$2\frac{1}{2}$,	3,	$3\frac{1}{2}$	$\frac{1}{4}$	.06	.11	.12	.15	.17	.21	.24	.26	.29	.31	.34			
1	$1\frac{1}{2}$	2,	$2\frac{1}{2}$,	3,	$3\frac{1}{2}$	$\frac{3}{8}$	.06	.11	.12	.15	.17	.21	.24	.26	.29	.31	.34			
$1\frac{1}{8}$	$1\frac{1}{2}$	2,	$2\frac{1}{2}$,	3,	$3\frac{1}{2}$	$\frac{1}{2}$	.06	.11	.13	.16	.18	.23	.26	.28	.31	.33	.36			
$1\frac{3}{8}$	2	$2\frac{1}{2}$,	3,	$3\frac{1}{2}$,	4	$\frac{3}{4}$	.08	.14	...	.18	.21	.26	.29	.32	.35	.38	.41			
$1\frac{1}{2}$	2	$2\frac{1}{2}$,	3,	$3\frac{1}{2}$,	4	1	.11	.19	...	.24	.28	.34	.38	.42	.47	.51	.55			
$1\frac{5}{8}$	$2\frac{1}{2}$	3,	$3\frac{1}{2}$,	4,	$4\frac{1}{2}$	$1\frac{1}{4}$	.17	.29	...	.32	.38	.45	.51	.57	.63	.69	.75			
$1\frac{3}{4}$	$2\frac{1}{2}$	3,	$3\frac{1}{2}$,	4,	$4\frac{1}{2}$	$1\frac{1}{2}$	.21	.35	...	.39	.46	.55	.63	.70	.77	.84	.91			
2	$2\frac{1}{2}$	3,	$3\frac{1}{2}$,	4,	$4\frac{1}{2}$	2	.27	.47	...	.52	.61	.74	.83	.93	1.03	1.13	1.23			
$2\frac{1}{2}$	3	$3\frac{1}{2}$,	4,	$4\frac{1}{2}$,	5	$2\frac{1}{2}$	.56	.86	...	...	1.00	1.26	1.41	1.56	1.71	1.86	2.01			
$2\frac{1}{2}$	3	$3\frac{1}{2}$,	4,	$4\frac{1}{2}$,	5	3	.70	1.10	...	...	1.30	1.60	1.80	2.00	2.20	2.40	2.60			
$2\frac{3}{4}$	4	$4\frac{1}{2}$,	5,	$5\frac{1}{2}$,	6	$3\frac{1}{2}$	1.20	1.70	...	...	...	2.10	2.35	2.60	2.85	3.15	3.40			
3	4	$4\frac{1}{2}$,	5,	$5\frac{1}{2}$,	6	4	1.35	1.87	...	...	...	2.30	2.60	2.90	3.20	3.50	3.80			
3	4	$4\frac{1}{2}$,	5,	$5\frac{1}{2}$,	6	$4\frac{1}{2}$	1.85	2.60	...	...	...	3.30	3.65	4.05	4.45	4.85	5.25			
$3\frac{1}{2}$	$4\frac{1}{2}$	5,	$5\frac{1}{2}$,	6,	$6\frac{1}{2}$	5	2.30	3.15	...	...	...	3.75	4.20	4.60	5.00	5.40	5.85			
$3\frac{1}{2}$	$4\frac{1}{2}$	5,	$5\frac{1}{2}$,	6,	$6\frac{1}{2}$	6	2.80	4.25	...	...	...	4.50	5.00	5.55	6.05	6.60	7.15			
4	5	6				7	4.25	4.95	...	...	...	5.65	6.35	7.05	7.75	8.45	9.20			
4	5	6				8	5.00	5.80	...	...	...	6.65	7.50	8.35	9.25	10.10	10.95			

Extra Heavy Wrought Nipples



Fig. 192. Close

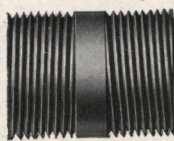


Fig. 194. Short

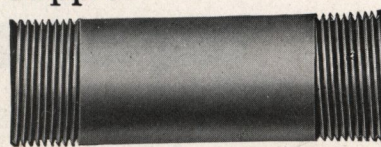


Fig. 196. Long

Extra Heavy Nipples

Extra Heavy Nipples.																
Length in Inches				Prices		Prices of Extra Long Nipples.						Length in Inches				
Close	Short	Long		Sizes	Close or Short	Long	4	5	6	7	8	9	10	11	12	
$\frac{3}{4}$	$1\frac{1}{2}$	2,	$2\frac{1}{2}$, 3,	$3\frac{1}{2}$	$\frac{1}{8}$	.12	.18	.21	.24	.30	.36	.42	.45	.51	.54	.57
$\frac{7}{8}$	$1\frac{1}{2}$	2,	$2\frac{1}{2}$, 3,	$3\frac{1}{2}$	$\frac{1}{4}$	.12	.18	.21	.24	.30	.36	.42	.45	.51	.54	.57
1	$1\frac{1}{2}$	2,	$2\frac{1}{2}$, 3,	$3\frac{1}{2}$	$\frac{3}{8}$	.12	.18	.21	.24	.30	.36	.42	.45	.51	.54	.57
	$1\frac{1}{2}$	2,	$2\frac{1}{2}$, 3,	$3\frac{1}{2}$	$\frac{1}{2}$	.15	.21	.24	.30	.36	.42	.48	.54	.60	.66	.69
$1\frac{1}{8}$	$1\frac{1}{2}$	2,	$2\frac{1}{2}$, 3,	$3\frac{1}{2}$	$\frac{3}{4}$	.18	.27	..	.33	.39	.51	.54	.60	.66	.72	.78
$1\frac{3}{8}$		2,	$2\frac{1}{2}$, 3,	$3\frac{1}{2}$, 4	1	.24	.39	..	.45	.54	.69	.75	.84	.93	1.02	1.08
$1\frac{1}{2}$	2	$2\frac{1}{2}$, 3,	$3\frac{1}{2}$, 4	$4\frac{1}{2}$	$1\frac{1}{4}$	.33	.51	..	.60	.72	.87	.99	1.08	1.20	1.32	1.41
$1\frac{5}{8}$	$2\frac{1}{2}$	3,	$3\frac{1}{2}$, 4,	$4\frac{1}{2}$	$1\frac{1}{2}$	.39	.60	..	.75	.87	1.08	1.20	1.35	1.50	1.62	1.77
$1\frac{3}{4}$	$2\frac{1}{2}$	3,	$3\frac{1}{2}$, 4,	$4\frac{1}{2}$	2	.54	.81	..	.96	1.14	1.50	1.62	1.77	1.95	2.16	2.31
2	$2\frac{1}{2}$	3,	$3\frac{1}{2}$, 4,	$4\frac{1}{2}$	$2\frac{1}{2}$	1.17	1.77	..	..	2.04	2.70	2.91	3.18	3.51	3.78	4.05
$2\frac{1}{2}$		3,	$3\frac{1}{2}$, 4,	$4\frac{1}{2}$, 5	3	1.44	2.16	..	..	2.55	3.24	3.60	3.99	4.35	4.74	5.10
$2\frac{3}{4}$	3	$3\frac{1}{2}$, 4,	$4\frac{1}{2}$, 5	$5\frac{1}{2}$	$3\frac{1}{2}$	2.25	3.15	..	..	3.90	4.35	4.80	5.25	5.70	6.30	6.30
3	4	$4\frac{1}{2}$, 5,	$5\frac{1}{2}$, 6	$6\frac{1}{2}$	4	2.55	3.60	..	..	4.56	5.07	5.61	6.15	6.66	7.20	7.20
3	4	$4\frac{1}{2}$, 5,	$5\frac{1}{2}$, 6	$6\frac{1}{2}$	$4\frac{1}{2}$	3.75	5.10	..	..	6.75	7.50	8.25	8.85	9.51	10.20	10.20
$3\frac{1}{2}$	$4\frac{1}{2}$	5,	$5\frac{1}{2}$, 6,	$6\frac{1}{2}$	5	4.65	7.35	..	..	7.74	8.49	9.30	10.05	10.80	11.55	11.55
$3\frac{1}{2}$	$4\frac{1}{2}$	5,	$5\frac{1}{2}$, 6,	$6\frac{1}{2}$	6	5.55	8.70	..	..	9.15	10.05	11.10	12.00	12.90	13.95	13.95
4	5	6	8	10	7	9.60	10.80	..	..	12.15	13.35	14.70	15.90	17.25	18.45	18.45
4	5	6	8	10	8	10.65	12.15	..	..	13.65	15.15	16.50	18.00	19.50	21.00	21.00
5	6	8	10	12	9	15.75	19.50	..	..	..	..	21.30	23.25	25.20	27.00	27.00
5	6	8	10	12	10	20.25	24.75	..	..	..	..	26.70	29.10	31.20	33.45	33.45
5	6	8	10	12	12	24.00	30.00	..	..	..	..	32.40	35.25	38.10	40.95	40.95

Note: List prices for Extra Heavy R. & L. Nipples—three times the list prices for R. & L. Standard Nipples.

Long Screws and Locknut Nipples

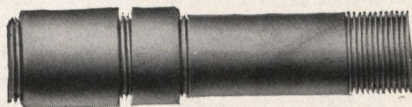


Fig. 197. Standard Long Screw

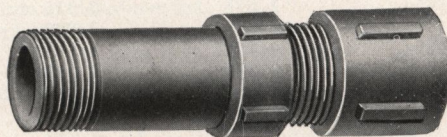


Fig. 198. Extra Heavy Long Screw

Standard Long Screws

Size, inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Standard Length, inches	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	$5\frac{1}{2}$	6	7	8	$8\frac{1}{2}$	9
Price, Black	.30	.35	.40	.55	.75	1.00	1.30	1.70	2.70	3.70	5.40	6.60
Price, Galvanized	.35	.40	.50	.66	1.00	1.25	1.60	2.10	3.10	4.70	6.50	7.75

Long Screws, longer than Standard, made to order and charged as Cut Pipe.

In ordering always specify the length of thread wanted.

Threads, Couplings and Locknuts, extra

Extra Heavy Long Screws

Size, inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Standard Length, inches	3	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	$5\frac{1}{2}$	6	7	8	$8\frac{1}{2}$	9
Black, each	.30	.35	.40	.55	.75	1.00	1.30	1.70	2.70	3.70	5.40	6.60
Galvanized	.35	.40	.50	.66	1.00	1.25	1.60	2.10	3.10	4.70	6.50	7.75

The Pipe Sockets and Locknuts used in making these Screws are Extra Heavy.

Long Screws, longer than Standard length, made to order at special prices.

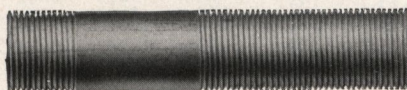


Fig. 199. Standard Locknut Nipple

Locknut Nipples—Plain

Not Over 6 Inches Long

Size, inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Each, Black	.50	.50	.55	.65	.70	.90	.95	1.10	1.50	1.75
Each, Galvanized	.65	.65	.75	.80	1.00	1.15	1.25	1.45	2.10	2.50

Seamless Drawn Brass and Copper Pipe — Iron Pipe Sizes



Fig. 202

Standard Iron Pipe Sizes

Iron Pipe Size, Inches	Actual Diameters		Approximate Weight Per Foot		Theoretical Safe Working Pressure	
	Outside, Inches	Inside, Inches	Brass, Pounds	Copper, Pounds	Brass, Pounds	Copper, Pounds
1/8	.405	.281	.25	.26	1776	1332
1/4	.540	.375	.43	.45	1465	1102
3/8	.675	.484	.62	.65	1160	870
1/2	.840	.625	.90	.95	1024	793
3/4	1.050	.822	1.25	1.31	840	630
1	1.315	1.062	1.70	1.79	750	563
1 1/4	1.660	1.368	2.50	2.63	628	471
1 1/2	1.900	1.600	3.00	3.15	580	435
2	2.375	2.062	4.00	4.20	509	381
2 1/2	2.875	2.500	5.75	6.04	518	391
3	3.500	3.062	8.30	8.72	461	346
3 1/2	4.000	3.500	10.90	11.45	449	337
4	4.500	4.000	12.70	13.33	427	320
4 1/2	5.000	4.500	13.90	14.60	412	309
5	5.563	5.062	15.75	16.54	400	300
6	6.625	6.125	18.31	19.23	375	281

Extra Heavy Iron Pipe Sizes

Iron Pipe Size, Inches	Actual Diameters		Approximate Weight Per Foot		Theoretical Safe Working Pressure	
	Outside, Inches	Inside, Inches	Brass, Pounds	Copper, Pounds	Brass, Pounds	Copper, Pounds
1/8	.405	.205	.370	.389	4442	3318
1/4	.540	.294	.625	.651	3401	2551
3/8	.675	.421	.830	.872	2508	1881
1/2	.840	.542	1.200	1.260	2166	1625
3/4	1.050	.736	1.660	1.743	1739	1302
1	1.315	.951	2.360	2.478	1500	1125
1 1/4	1.660	1.272	3.300	3.465	1250	938
1 1/2	1.900	1.494	4.250	4.462	1142	857
2	2.375	1.933	5.460	5.733	1006	755
2 1/2	2.875	2.315	8.300	8.715	991	743
3	3.500	2.892	11.200	11.760	904	678
3 1/2	4.000	3.358	13.700	14.385	846	635
4	4.500	3.818	16.500	17.325	814	611
4 1/2	5.000	4.250	19.470	20.440	....	....
5	5.563	4.813	22.300	23.940	763	578
6	6.625	5.750	32.000	33.600	740	555

Standard and Extra Heavy and Tinned and Nickel-plated Brass Pipe at market prices.

Brass Nipples — Iron Pipe Sizes



Fig. 204. Brass Close Nipple

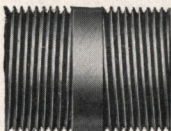


Fig. 206. Brass Short Nipple

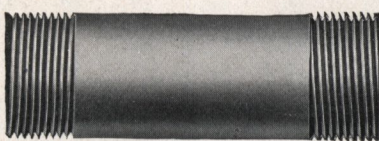


Fig. 208. Brass Long Nipple

Brass Nipples — Iron Pipe Sizes

Size	Length Close	Length, Inches.				Price Each							
		Close	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6	
1/8	3/4	.11	.13	.15	.17	.19	.21	.23	.25	.27	.29	.31	
1/4	7/8	.13	.16	.19	.22	.25	.28	.31	.34	.37	.40	.43	
3/8	1	.15	.19	.23	.27	.31	.35	.39	.43	.47	.51	.55	
1/2	1 1/8	.23	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	
3/4	1 3/4	.28	...	.35	.42	.49	.56	.63	.70	.77	.84	.91	
1	1 1/2	.37	...	.44	.53	.62	.71	.80	.89	.98	1.07	1.16	
1 1/4	1 5/8	.60	...	...	.75	.88	1.01	1.14	1.27	1.40	1.53	1.66	
1 1/2	1 3/4	.70	...	...	.90	1.05	1.20	1.35	1.50	1.65	1.80	1.95	
2	2	1.00	...	...	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	
2 1/2	2 1/2	1.70	...	...	...	2.00	2.30	2.60	2.90	3.20	3.50	3.80	
3	2 1/2	2.50	...	...	...	2.90	3.30	3.70	4.10	4.50	4.90	5.30	
3 1/2	2 3/4	4.00	...	...	...	...	...	5.40	6.00	6.60	7.20	7.80	
4	3	4.75	...	...	...	...	...	6.15	6.85	7.55	8.25	8.95	
4 1/2	3	5.50	...	...	...	...	...	7.20	8.05	8.90	9.75	10.60	
5	3 1/2	8.50	...	...	...	...	...	...	10.60	11.65	12.70	13.75	
6	3 1/2	11.50	...	...	...	...	...	...	14.10	15.40	16.70	18.00	

Note: Sizes not listed above made to order at special net prices. Finished Nipples longer than Close add 25 per cent. For Extra Heavy Brass Nipples add 100 per cent. to above list.

Pipe Cutting and Threading

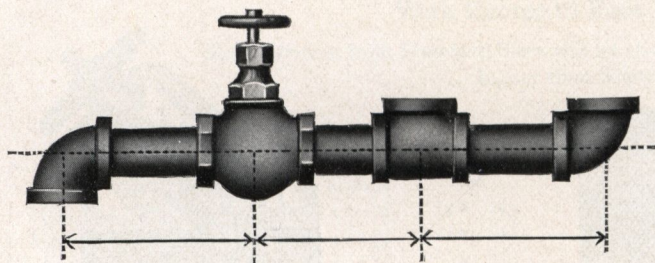
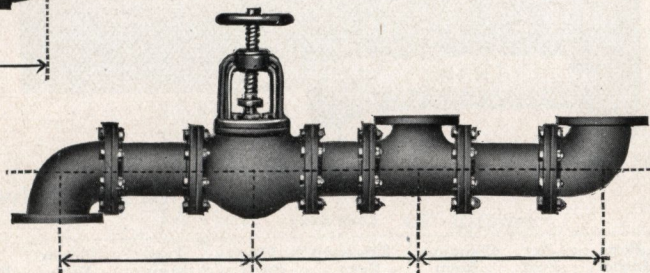


Diagram showing flange-end section of pipe, valve and fittings.

Diagram showing screw-end section of pipe, valve and fittings.



Please Note

In making up pipe sketches special care should be taken that all measurements are accurately given from center to center, in the manner shown in these diagrams.

It will also enable us to execute orders more intelligently if the service in which the material is to be employed is described and the working pressure specified.

Price List Standard Pipe Threads

Size, inches	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Price, each	.06	.06	.06	.06	.06	.06	.08	.10	.14	.20	.30	.40	.40
Size, inches	$4\frac{1}{2}$	5	6	7	8	9	10	12	14	15	16	18	
Price, each	.50	.60	.80	1.00	1.20	2.00	2.50	3.50	6.50	7.50	10.00	24.00	

For cutting only, standard weight and extra strong pipe, take two-thirds of the above list.
For cutting or threading double extra strong pipe, special price on application.

Price List of Locknut Threads

Size, inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Price, each	.10	.10	.10	.10	.12	.14	.16	.20	.30	.40	.50	.70

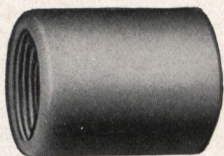


Fig. 212. Standard

Wrought Iron Couplings

Standard and Drive Pipe

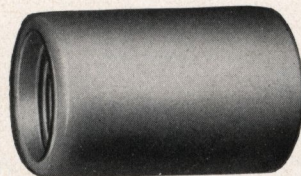


Fig. 214. Drive Pipe

Standard Couplings

Size, inches	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Plain, each	.05	.05	.06	.07	.10	.13	.17	.21	.28	.40
Galvanized, each	.06	.06	.08	.10	.13	.18	.25	.32	.40	.55
Size, inches	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6	7	8	9	10
Plain, each	.60	.80	1.00	1.50	1.65	2.40	3.25	4.25	5.50	7.50
Galvanized, each	.80	1.05	1.40	2.00	2.25	3.25	4.20	5.50	7.00	9.75

Drive Pipe Couplings

Size, inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$
Plain, each	.10	.12	.15	.25	.30	.40	.60	.80	1.30
Galvanized, each	.14	.16	.21	.37	.46	.57	.85	1.15	1.90
Size, inches	4	$4\frac{1}{2}$	5	6	7	8	9	10	12
Plain, each	1.50	2.00	2.40	2.80	3.85	4.00	5.00	6.00	8.00
Galvanized, each	2.15	2.85	3.45	4.00	5.55	5.80	7.25	8.75	11.15

Right and Left Black and Galvanized Standard and Drive Pipe Couplings to order in all sizes to 12 inches inclusive.

Lined Pipe, Valves and Fittings

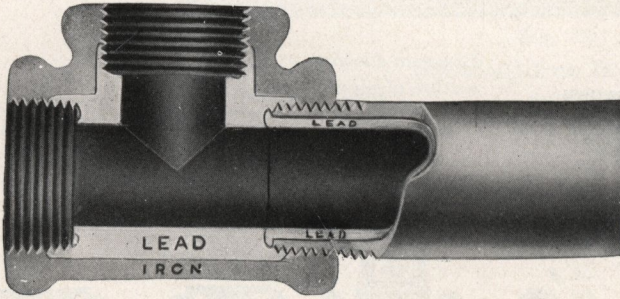


Fig. 222. Showing Lead-lined Connection

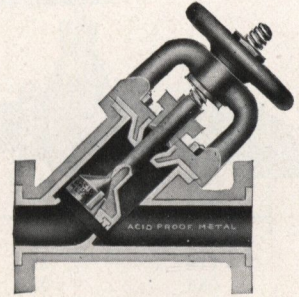


Fig. 224. Y-Pattern Lead-lined Valve

Lined Iron Pipe, Valves and Fittings

Lead-lined							Block Tin-lined					
Pipe Inches	Per Foot	Couplings Each	Elbows Each	St. Elbows Each	Tees Each	Unions Each	Pipe Per Foot	Couplings Each	Elbows Each	Tees Each	Unions Each	Caps
1/2	.20	.22	.32	.57	.40	.62	.75	.30	.50	.60	.85	.50
3/4	.25	.22	.32	.67	.40	.62	.80	.30	.50	.60	.85	.50
1	.37	.28	.40	.77	.55	.75	1.10	.37	.60	.75	1.10	.60
1 1/4	.50	.50	.62	.90	.70	.95	1.40	.70	.85	.95	1.35	.85
1 1/2	.60	.62	.75	1.50	.88	1.25	1.75	.85	1.10	1.20	1.70	1.10
2	.80	.80	1.10	2.30	1.25	1.65	2.25	1.15	1.50	1.75	2.25	1.50
2 1/2	1.22	1.35	1.60	....	2.00	2.50	3.15	1.75	2.25	2.75	3.50	2.25
3	1.70	1.85	3.00	....	3.65	5.00	4.00	2.50	4.00	4.80	7.00	4.00
3 1/2	1.90	....	....	....	....	....	5.00	3.75	6.00	8.00	....	6.00
4	2.25	3.25	5.00	....	6.50	....	6.00	4.50	7.00	9.00	....	7.00
4 1/2	2.50	....	....	....	....	....	7.00	6.50	9.00	10.00	....	9.00
5	3.30	5.00	7.50	....	8.00	....	8.50	7.00	10.00	11.00	....	10.00
6	4.00	5.85	8.50	....	9.75	....	12.00	8.00	12.00	13.50	....	12.00

Nipples: Close and Short Nipples under 4 inches in length, same as one foot of pipe of same size; 4 to 9 inches long, inclusive, one and one-half times price per foot of pipe of same size.

Lead-covered Iron Pipe

Size, inches.....	1/2	3/4	1	1 1/4	1 1/2	2	3
Standard, per foot.....	.35	.45	.60	.85	1.10	1.40	2.95
Extra Heavy, per foot.....	.40	.50	.67	.95	1.22	1.58	3.50

Lead-covered Fittings, double the list of lead-lined.

Lined Brass and Copper Pipe

Size, inches.....	1/2	3/4	1	1 1/4	1 1/2	2
Tin-lined Brass Pipe, per foot.....	1.30	1.40	1.75	2.35	3.00	4.00
Tin-lined Copper Pipe, per foot.....	1.45	1.60	2.00	2.60	3.50	4.50
Lead-lined Brass Pipe, per foot.....	.60	.80	1.12	1.60	1.95	2.50

Special Finish Brass Fittings

As used with Brass-lined and Copper-lined Pipe

Size, inches.....	1/2	3/4	1	1 1/4	1 1/2	2
Elbows, each.....	.20	.25	.35	.50	.60	.90
Tees, each.....	.30	.35	.50	.60	.80	1.10
Couplings, each.....	.20	.25	.35	.40	.50	.75

Acid-proof Valves—Y and Angle Patterns

Heavily lined throughout with a special acid-resisting alloy, and seats made of a composition which, being harder than lead, is better adapted to withstand the cutting or wear likely to occur at this point.

Size, inches.....	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6
Flanged, each.....	11.00	15.00	16.00	18.00	25.00	30.00	40.00	55.00	95.00	120.00
With Companion Flanges.....	13.00	17.00	18.00	20.50	28.00	34.00	45.00	62.00	105.00	135.00

Flanged Lead-lined Pipe and Fittings

To estimate the cost of Flanged Pipe, add to the price of lead-lined pipe as listed above the prices of flanges as listed below, which includes making on to the pipe and lead facing.

Pipe size, inches.....	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	7	8	10	12
Flanges, each.....	1.10	1.35	1.60	2.25	3.25	4.00	4.75	5.50	6.75	7.75	8.25	10.00	13.00
Flanged Tees, each.....	7.00	7.50	8.00	9.00	10.50	14.00	18.00	25.00	35.00	60.00	80.00	125.00	150.00
Flanged Elbows, each.....	5.00	5.25	5.50	6.00	8.00	10.00	14.00	20.00	30.00	52.00	65.00	110.00	130.00

Lead-lined Soil Pipe and Fittings

Extra Heavy

Size, inches.....	2	3	4	5	6	8
Single Hub, per foot.....	1.00	1.60	2.15	3.50	4.00	6.25
Double Hub, per foot.....	1.15	1.85	2.45	4.00	4.60	7.25
Elbows, each.....	2.25	3.00	5.25	6.00	6.50	14.00
Tees and Y-Branches, each.....	2.75	3.25	6.50	8.00	9.00	27.00
Vented Running Traps, each.....	10.25	12.50	16.00	22.00	28.00	.....

For Double Y-Branches add 50 per cent to list of Single Y-Branches.

Recessed Lead-lined Drainage Fittings furnished or quoted on specifications.

List of Standard Sizes of Cast Iron Fittings

With Center to Face Measurements

Sizes differing from Standard Sizes will be charged at five per cent. gross discount
higher than Standard Sizes

Straight Elbows

Size	Center to Face
$\frac{1}{4}$ x $\frac{1}{4}$	$\frac{7}{8}$ x $\frac{7}{8}$
$\frac{3}{8}$ x $\frac{3}{8}$	$1\frac{1}{16}$ x $1\frac{1}{16}$
$\frac{1}{2}$ x $\frac{1}{2}$	$1\frac{1}{8}$ x $1\frac{1}{8}$
$\frac{3}{4}$ x $\frac{3}{4}$	$1\frac{9}{32}$ x $1\frac{9}{32}$
1 x 1.....	$1\frac{1}{2}$ x $1\frac{1}{2}$
$1\frac{1}{4}$ x $1\frac{1}{4}$	$1\frac{3}{4}$ x $1\frac{3}{4}$
$1\frac{1}{2}$ x $1\frac{1}{2}$	2 x 2
2 x 2.....	$2\frac{7}{32}$ x $2\frac{7}{32}$
$2\frac{1}{2}$ x $2\frac{1}{2}$	$2\frac{9}{16}$ x $2\frac{9}{16}$
3 x 3.....	$2\frac{11}{16}$ x $2\frac{11}{16}$
$3\frac{1}{2}$ x $3\frac{1}{2}$	$3\frac{5}{16}$ x $3\frac{5}{16}$
4 x 4.....	$3\frac{9}{16}$ x $3\frac{9}{16}$
$4\frac{1}{2}$ x $4\frac{1}{2}$	$3\frac{11}{16}$ x $3\frac{11}{16}$
5 x 5.....	$4\frac{3}{8}$ x $4\frac{3}{8}$
6 x 6.....	5 x 5
7 x 7.....	6 x 6
8 x 8.....	$6\frac{1}{16}$ x $6\frac{1}{16}$
9 x 9.....	$8\frac{1}{16}$ x $8\frac{1}{16}$
10 x 10.....	$9\frac{1}{2}$ x $9\frac{1}{2}$
12 x 12.....	$10\frac{1}{2}$ x $10\frac{1}{2}$

Right and Left Elbows

Size	Center to Face
$\frac{3}{8}$ x $\frac{3}{8}$	$1\frac{1}{16}$ x $1\frac{1}{16}$
$\frac{1}{2}$ x $\frac{1}{2}$	$1\frac{1}{8}$ x $1\frac{1}{8}$
$\frac{3}{4}$ x $\frac{3}{4}$	$1\frac{9}{32}$ x $1\frac{9}{32}$
1 x 1.....	$1\frac{1}{2}$ x $1\frac{1}{2}$
$1\frac{1}{4}$ x $1\frac{1}{4}$	$1\frac{3}{4}$ x $1\frac{3}{4}$
$1\frac{1}{2}$ x $1\frac{1}{2}$	2 x 2
2 x 2.....	$2\frac{7}{32}$ x $2\frac{7}{32}$
$2\frac{1}{2}$ x $2\frac{1}{2}$	$2\frac{9}{16}$ x $2\frac{9}{16}$
3 x 3.....	$2\frac{11}{16}$ x $2\frac{11}{16}$
$3\frac{1}{2}$ x $3\frac{1}{2}$	$3\frac{5}{16}$ x $3\frac{5}{16}$
4 x 4.....	$3\frac{9}{16}$ x $3\frac{9}{16}$

Pitched Elbows

Size	Center to Face
$\frac{3}{4}$ x $\frac{3}{4}$	$1\frac{9}{32}$ x $1\frac{9}{32}$
1 x 1.....	$1\frac{1}{2}$ x $1\frac{1}{2}$
$1\frac{1}{4}$ x $1\frac{1}{4}$	$1\frac{3}{4}$ x $1\frac{3}{4}$
$1\frac{1}{2}$ x $1\frac{1}{2}$	2 x 2
2 x 2.....	$2\frac{7}{32}$ x $2\frac{7}{32}$
$2\frac{1}{2}$ x $2\frac{1}{2}$	$2\frac{9}{16}$ x $2\frac{9}{16}$
3 x 3.....	$2\frac{11}{16}$ x $2\frac{11}{16}$
$3\frac{1}{2}$ x $3\frac{1}{2}$	$3\frac{5}{16}$ x $3\frac{5}{16}$
4 x 4.....	$3\frac{9}{16}$ x $3\frac{9}{16}$

Reducing Elbows

Size	Center to Face
$\frac{3}{8}$ x $\frac{1}{4}$	$\frac{7}{8}$ x $1\frac{5}{16}$
$\frac{1}{2}$ x $\frac{3}{8}$	$1\frac{1}{16}$ x $1\frac{1}{8}$
$\frac{1}{2}$ x $\frac{1}{4}$	$1\frac{1}{16}$ x $1\frac{1}{8}$
$\frac{3}{4}$ x $\frac{1}{2}$	$1\frac{3}{16}$ x $1\frac{3}{8}$
$\frac{3}{4}$ x $\frac{3}{8}$	$1\frac{1}{8}$ x $1\frac{1}{16}$
$\frac{3}{4}$ x $\frac{1}{4}$	$1\frac{1}{8}$ x $1\frac{1}{16}$
1 x $\frac{3}{4}$	$1\frac{3}{8}$ x $1\frac{1}{2}$
1 x $\frac{1}{2}$	$1\frac{5}{16}$ x $1\frac{1}{2}$
1 x $\frac{3}{8}$	x
$1\frac{1}{4}$ x 1.....	$1\frac{1}{2}$ x $1\frac{3}{4}$
$1\frac{1}{4}$ x $\frac{3}{4}$	$1\frac{1}{2}$ x $1\frac{1}{16}$
$1\frac{1}{4}$ x $\frac{1}{2}$	$1\frac{3}{8}$ x $1\frac{1}{16}$
$1\frac{1}{2}$ x $1\frac{1}{4}$	$1\frac{3}{4}$ x 2
$1\frac{1}{2}$ x 1.....	$1\frac{5}{8}$ x $1\frac{1}{16}$
$1\frac{1}{2}$ x $\frac{3}{4}$	$1\frac{9}{16}$ x $1\frac{7}{8}$
$1\frac{1}{2}$ x $\frac{1}{2}$	$1\frac{3}{8}$ x $1\frac{1}{16}$
2 x $1\frac{1}{2}$	$1\frac{11}{16}$ x $2\frac{1}{4}$
2 x $1\frac{1}{4}$	$1\frac{11}{16}$ x $2\frac{1}{8}$
2 x 1.....	$1\frac{11}{16}$ x $2\frac{1}{8}$
2 x $\frac{3}{4}$	$1\frac{9}{16}$ x $2\frac{1}{8}$
$2\frac{1}{2}$ x 2.....	$2\frac{3}{16}$ x $2\frac{9}{16}$
$2\frac{1}{2}$ x $1\frac{1}{2}$	$2\frac{1}{16}$ x $2\frac{9}{16}$
$2\frac{1}{2}$ x $1\frac{1}{4}$	$1\frac{15}{16}$ x $2\frac{1}{2}$
$2\frac{1}{2}$ x 1.....	$1\frac{11}{16}$ x $2\frac{7}{16}$
3 x $2\frac{1}{2}$	$2\frac{5}{8}$ x $2\frac{15}{16}$
3 x 2.....	$2\frac{5}{16}$ x $2\frac{15}{16}$
3 x $1\frac{1}{2}$	$2\frac{1}{8}$ x $2\frac{7}{8}$
$3\frac{1}{2}$ x 3.....	$2\frac{11}{16}$ x $3\frac{5}{16}$
$3\frac{1}{2}$ x $2\frac{1}{2}$	$2\frac{3}{4}$ x $3\frac{5}{16}$
$3\frac{1}{2}$ x 2.....	$2\frac{3}{8}$ x $3\frac{5}{16}$
4 x $3\frac{1}{2}$	$3\frac{3}{8}$ x $3\frac{5}{16}$
4 x 3.....	3 x $3\frac{9}{16}$
4 x $2\frac{1}{2}$	$2\frac{11}{16}$ x $3\frac{9}{16}$
4 x 2.....	$2\frac{7}{16}$ x $3\frac{5}{8}$
$4\frac{1}{2}$ x 4.....	$3\frac{5}{8}$ x $3\frac{7}{8}$
5 x $4\frac{1}{2}$	$4\frac{1}{16}$ x $4\frac{3}{8}$
5 x 4.....	$3\frac{7}{8}$ x $4\frac{1}{4}$
5 x $3\frac{1}{2}$	$3\frac{3}{4}$ x $4\frac{1}{4}$
5 x 3.....	$3\frac{3}{8}$ x $4\frac{5}{16}$
6 x 5.....	$4\frac{3}{8}$ x 5
6 x 4.....	$3\frac{15}{16}$ x $4\frac{7}{8}$
6 x 3.....	$3\frac{5}{16}$ x $4\frac{13}{16}$
7 x 6.....	$5\frac{1}{16}$ x $5\frac{11}{16}$
8 x 6.....	$5\frac{1}{2}$ x $6\frac{1}{4}$

Reducing Pitched Elbows

Size	Center to Face
1 x $\frac{3}{4}$	$1\frac{3}{8}$ x $1\frac{1}{2}$
$1\frac{1}{4}$ x 1.....	$1\frac{1}{2}$ x $1\frac{3}{4}$
$1\frac{1}{2}$ x $1\frac{1}{4}$	$1\frac{3}{4}$ x 2
2 x $1\frac{1}{2}$	$1\frac{15}{16}$ x $2\frac{1}{4}$

Reducing Pitched Elbows
(Continued)

Size	Center to Face
2 x $1\frac{1}{4}$	$1\frac{13}{16}$ x $2\frac{1}{8}$
$2\frac{1}{2}$ x 2.....	$2\frac{1}{16}$ x $2\frac{9}{16}$
3 x $2\frac{1}{2}$	$2\frac{5}{8}$ x $2\frac{15}{16}$
3 x 2.....	$2\frac{5}{16}$ x $2\frac{15}{16}$
$3\frac{1}{2}$ x 3.....	$2\frac{11}{16}$ x $3\frac{1}{16}$

45° Elbows

Size	Center to Face
$\frac{3}{8}$ x $\frac{3}{8}$	$\frac{3}{4}$ x $\frac{3}{4}$
$\frac{1}{2}$ x $\frac{1}{2}$	$\frac{7}{8}$ x $\frac{7}{8}$
$\frac{3}{4}$ x $\frac{3}{4}$	$1\frac{1}{8}$ x $1\frac{1}{8}$
1 x 1.....	$1\frac{3}{16}$ x $1\frac{3}{16}$
$1\frac{1}{4}$ x $1\frac{1}{4}$	$1\frac{1}{4}$ x $1\frac{1}{4}$
$1\frac{1}{2}$ x $1\frac{1}{2}$	$1\frac{3}{8}$ x $1\frac{3}{8}$
2 x 2.....	$1\frac{5}{8}$ x $1\frac{5}{8}$
$2\frac{1}{2}$ x $2\frac{1}{2}$	$1\frac{3}{4}$ x $1\frac{3}{4}$
3 x 3.....	2 x 2
$3\frac{1}{2}$ x $3\frac{1}{2}$	$2\frac{1}{8}$ x $2\frac{7}{8}$
4 x 4.....	$2\frac{1}{4}$ x $2\frac{1}{4}$
$4\frac{1}{2}$ x $4\frac{1}{2}$	$2\frac{5}{8}$ x $2\frac{5}{8}$
5 x 5.....	$2\frac{11}{16}$ x $2\frac{11}{16}$
6 x 6.....	$3\frac{1}{8}$ x $3\frac{1}{8}$
7 x 7.....	$3\frac{7}{16}$ x $3\frac{7}{16}$
8 x 8.....	$3\frac{7}{8}$ x $3\frac{7}{8}$
9 x 9.....	$5\frac{3}{4}$ x $5\frac{3}{4}$
10 x 10.....	$6\frac{3}{8}$ x $6\frac{3}{8}$
12 x 12.....	$7\frac{1}{16}$ x $7\frac{1}{16}$

Straight Tees

Size	Center to Face
$\frac{1}{4}$ x $\frac{1}{4}$ x $\frac{1}{4}$	$\frac{7}{8}$ x $\frac{7}{8}$ x $\frac{7}{8}$
$\frac{3}{8}$ x $\frac{3}{8}$ x $\frac{3}{8}$	$1\frac{1}{16}$ x $1\frac{1}{16}$ x $1\frac{1}{16}$
$\frac{1}{2}$ x $\frac{1}{2}$ x $\frac{1}{2}$	$1\frac{1}{8}$ x $1\frac{1}{8}$ x $1\frac{1}{8}$
$\frac{3}{4}$ x $\frac{3}{4}$ x $\frac{3}{4}$	$1\frac{5}{16}$ x $1\frac{5}{16}$ x $1\frac{5}{16}$
1 x 1 x 1.....	$1\frac{1}{2}$ x $1\frac{1}{2}$ x $1\frac{1}{2}$
$1\frac{1}{4}$ x $1\frac{1}{4}$ x $1\frac{1}{4}$	$1\frac{3}{4}$ x $1\frac{3}{4}$ x $1\frac{3}{4}$
$1\frac{1}{2}$ x $1\frac{1}{2}$ x $1\frac{1}{2}$	$1\frac{15}{16}$ x $1\frac{15}{16}$ x $1\frac{15}{16}$
2 x 2 x 2.....	$2\frac{1}{4}$ x $2\frac{1}{4}$ x $2\frac{1}{4}$
$2\frac{1}{2}$ x $2\frac{1}{2}$ x $2\frac{1}{2}$	$2\frac{9}{16}$ x $2\frac{9}{16}$ x $2\frac{9}{16}$
3 x 3 x 3.....	$2\frac{11}{16}$ x $2\frac{11}{16}$ x $2\frac{11}{16}$
$3\frac{1}{2}$ x $3\frac{1}{2}$ x $3\frac{1}{2}$	$3\frac{1}{4}$ x $3\frac{1}{4}$ x $3\frac{1}{4}$
4 x 4 x 4.....	$3\frac{9}{16}$ x $3\frac{9}{16}$ x $3\frac{9}{16}$
$4\frac{1}{2}$ x $4\frac{1}{2}$ x $4\frac{1}{2}$	$3\frac{11}{16}$ x $3\frac{11}{16}$ x $3\frac{11}{16}$
5 x 5 x 5.....	$4\frac{3}{8}$ x $4\frac{3}{8}$ x $4\frac{3}{8}$
6 x 6 x 6.....	5 x 5 x 5
7 x 7 x 7.....	6 x 6 x 6
8 x 8 x 8.....	$6\frac{9}{16}$ x $6\frac{9}{16}$ x $6\frac{9}{16}$
9 x 9 x 9.....	$8\frac{1}{16}$ x $8\frac{1}{16}$ x $8\frac{1}{16}$
10 x 10 x 10.....	$9\frac{1}{2}$ x $9\frac{1}{2}$ x $9\frac{1}{2}$
12 x 12 x 12.....	$10\frac{1}{2}$ x $10\frac{1}{2}$ x $10\frac{1}{2}$

List of Standard Sizes of Cast Iron Fittings

Reducing Tees—Continued

Size	Center to Face	Size	Center to Face	Size	Center to Face
3 x3 x4	$3\frac{1}{2} \times 3\frac{1}{2} \times 3$	4 x4 x2½	$2\frac{1}{16} \times 2\frac{1}{16} \times 3\frac{9}{16}$	5 x4 x2	$2\frac{9}{16} \times 2\frac{9}{16} \times 4\frac{1}{8}$
3 x3 x3½	$3\frac{1}{4} \times 3\frac{1}{4} \times 2\frac{1}{16}$	4 x4 x2	$2\frac{1}{16} \times 2\frac{1}{16} \times 3\frac{9}{16}$	5 x4 x1½	$2\frac{3}{8} \times 2\frac{3}{8} \times 4\frac{1}{8}$
3 x3 x2½	$2\frac{1}{2} \times 2\frac{1}{2} \times 2\frac{1}{8}$	4 x4 x1½	$2\frac{3}{16} \times 2\frac{3}{16} \times 3\frac{1}{2}$	5 x3 x5	$4\frac{3}{8} \times 4\frac{3}{8} \times 4\frac{3}{8}$
3 x3 x2	$2\frac{1}{8} \times 2\frac{1}{8} \times 3$	4 x4 x1¼	$2\frac{1}{16} \times 2\frac{1}{16} \times 3\frac{1}{2}$	5 x3 x4½	$4\frac{1}{8} \times 4\frac{1}{8} \times 4\frac{5}{16}$
3 x3 x1½	$2\frac{1}{8} \times 2\frac{1}{8} \times 2\frac{1}{8}$	4 x4 x1	$1\frac{7}{8} \times 1\frac{7}{8} \times 3\frac{1}{2}$	5 x3 x4	$3\frac{7}{8} \times 3\frac{7}{8} \times 4\frac{1}{4}$
3 x3 x1¼	$1\frac{1}{16} \times 1\frac{1}{16} \times 2\frac{1}{8}$	4 x4 x¾	$1\frac{1}{16} \times 1\frac{1}{16} \times 3\frac{3}{8}$	5 x3 x3½	$3\frac{9}{16} \times 3\frac{9}{16} \times 4\frac{3}{16}$
3 x3 x1	$1\frac{1}{16} \times 1\frac{1}{16} \times 2\frac{7}{8}$	4 x3½ x4	$3\frac{9}{16} \times 3\frac{9}{16} \times 3\frac{9}{16}$	5 x3 x3	$3\frac{1}{8} \times 3\frac{1}{8} \times 4\frac{1}{8}$
3 x3 x¾	$1\frac{3}{4} \times 1\frac{3}{4} \times 2\frac{3}{4}$	4 x3½ x3½	$3\frac{3}{8} \times 3\frac{3}{8} \times 3\frac{5}{8}$	5 x3 x2½	$2\frac{1}{8} \times 2\frac{1}{8} \times 4\frac{1}{8}$
3 x2½ x4	$3\frac{9}{16} \times 3\frac{9}{16} \times 3\frac{9}{16}$	4 x3½ x3	$3 \times 3 \times 3\frac{9}{16}$	5 x3 x2	$2\frac{1}{2} \times 2\frac{1}{2} \times 4\frac{1}{8}$
3 x2½ x3	$3\frac{1}{8} \times 3\frac{1}{8} \times 3\frac{1}{8}$	4 x3½ x2½	$2\frac{5}{8} \times 2\frac{5}{8} \times 3\frac{9}{16}$	5 x2½ x5	$4\frac{1}{2} \times 4\frac{1}{2} \times 4\frac{1}{2}$
3 x2½ x2½	$2\frac{1}{16} \times 2\frac{1}{16} \times 3$	4 x3½ x2	$2\frac{5}{16} \times 2\frac{5}{16} \times 3\frac{5}{8}$	5 x2½ x4	$3\frac{7}{8} \times 3\frac{7}{8} \times 4\frac{1}{4}$
3 x2½ x2	$2\frac{1}{4} \times 2\frac{1}{4} \times 2\frac{1}{8}$	4 x3½ x1½	$2\frac{1}{16} \times 2\frac{1}{16} \times 3\frac{1}{2}$	5 x2½ x3	$3\frac{5}{16} \times 3\frac{5}{16} \times 4\frac{3}{16}$
3 x2½ x1½	$2\frac{1}{16} \times 2\frac{1}{16} \times 2\frac{7}{8}$	4 x3½ x1¼	$2 \times 2 \times 3\frac{1}{2}$	5 x2 x5	$4\frac{1}{2} \times 4\frac{1}{2} \times 4\frac{1}{2}$
3 x2½ x1¼	$1\frac{7}{8} \times 1\frac{7}{8} \times 2\frac{7}{8}$	4 x3 x4	$3\frac{9}{16} \times 3\frac{9}{16} \times 3\frac{9}{16}$	5 x1½ x5	$4\frac{7}{16} \times 4\frac{7}{16} \times 4\frac{7}{16}$
3 x2½ x1	$1\frac{3}{4} \times 1\frac{3}{4} \times 3$	4 x3 x3½	$3\frac{1}{16} \times 3\frac{1}{16} \times 3\frac{5}{8}$	6 x6 x8	$6\frac{3}{16} \times 6\frac{3}{16} \times 5\frac{5}{16}$
3 x2 x4	$3\frac{3}{4} \times 3\frac{3}{4} \times 3\frac{1}{4}$	4 x3 x3	$3 \times 3 \times 3\frac{9}{16}$	6 x6 x7	$5\frac{5}{8} \times 5\frac{5}{8} \times 5\frac{1}{4}$
3 x2 x3	$3\frac{1}{8} \times 3\frac{1}{8} \times 3\frac{1}{8}$	4 x3 x2½	$2\frac{5}{8} \times 2\frac{5}{8} \times 3\frac{9}{16}$	6 x6 x5	$4\frac{3}{8} \times 4\frac{3}{8} \times 5$
3 x2 x2½	$2\frac{1}{16} \times 2\frac{1}{16} \times 3$	4 x3 x2	$2\frac{1}{16} \times 2\frac{1}{16} \times 3\frac{5}{8}$	6 x6 x4½	$4\frac{3}{8} \times 4\frac{3}{8} \times 5$
3 x2 x2	$2\frac{1}{4} \times 2\frac{1}{4} \times 3$	4 x3 x1½	$2\frac{1}{8} \times 2\frac{1}{8} \times 3\frac{9}{16}$	6 x6 x4	$3\frac{13}{16} \times 3\frac{13}{16} \times 4\frac{15}{16}$
3 x2 x1½	$2\frac{1}{8} \times 2\frac{1}{8} \times 3$	4 x3 x1¼	$1\frac{1}{16} \times 1\frac{1}{16} \times 3\frac{1}{2}$	6 x6 x3½	$3\frac{9}{16} \times 3\frac{9}{16} \times 4\frac{1}{4}$
3 x2 x1¼	$2\frac{1}{16} \times 2\frac{1}{16} \times 3$	4 x3 x1	$1\frac{7}{8} \times 1\frac{7}{8} \times 3\frac{1}{2}$	6 x6 x3	$3\frac{1}{4} \times 3\frac{1}{4} \times 4\frac{1}{4}$
3 x2 x1	$2\frac{1}{16} \times 2\frac{1}{16} \times 3$	4 x3 x¾	$1\frac{7}{8} \times 1\frac{7}{8} \times 3\frac{1}{2}$	6 x6 x2½	$2\frac{7}{8} \times 2\frac{7}{8} \times 4\frac{3}{4}$
3 x1½ x4	$3\frac{1}{16} \times 3\frac{1}{16} \times 3\frac{1}{4}$	4 x2½ x4	$3\frac{9}{16} \times 3\frac{9}{16} \times 3\frac{9}{16}$	6 x6 x2	$2\frac{9}{16} \times 2\frac{9}{16} \times 4\frac{3}{4}$
3 x1½ x3	$3\frac{1}{8} \times 3\frac{1}{8} \times 3\frac{1}{8}$	4 x2½ x3	$3 \times 3 \times 3\frac{9}{16}$	6 x6 x1½	$2\frac{1}{16} \times 2\frac{1}{16} \times 4\frac{1}{4}$
3 x1½ x2½	$2\frac{1}{16} \times 2\frac{1}{16} \times 2\frac{1}{8}$	4 x2½ x2½	$2\frac{5}{8} \times 2\frac{5}{8} \times 3\frac{9}{16}$	6 x6 x1¼	$2\frac{5}{16} \times 2\frac{5}{16} \times 4\frac{5}{8}$
3 x1½ x2	$2\frac{3}{8} \times 2\frac{3}{8} \times 3\frac{1}{8}$	4 x2½ x2	$2\frac{1}{2} \times 2\frac{1}{2} \times 3\frac{1}{2}$	6 x6 x1	$2\frac{5}{16} \times 2\frac{5}{16} \times 4\frac{5}{8}$
3 x1½ x1	$3\frac{1}{8} \times 3\frac{1}{8} \times 3\frac{1}{8}$	4 x2½ x1½	$2\frac{1}{2} \times 2\frac{1}{2} \times 3\frac{1}{2}$	6 x5 x6	$5\frac{1}{8} \times 5\frac{1}{8} \times 5\frac{1}{8}$
3 x1¼ x2½	$2\frac{1}{16} \times 2\frac{1}{16} \times 3$	4 x2½ x1	$1\frac{1}{16} \times 1\frac{1}{16} \times 3\frac{1}{2}$	6 x5 x5	$4\frac{7}{16} \times 4\frac{7}{16} \times 5\frac{1}{16}$
3 x1 x3	$3\frac{1}{8} \times 3\frac{1}{8} \times 3\frac{1}{8}$	4 x2 x4	$3\frac{9}{16} \times 3\frac{9}{16} \times 3\frac{9}{16}$	6 x5 x4	$4\frac{1}{16} \times 4\frac{1}{16} \times 5$
3 x¾ x3	$3\frac{1}{8} \times 3\frac{1}{8} \times 3\frac{1}{8}$	4 x2 x3	$3 \times 3 \times 3\frac{9}{16}$	6 x5 x3	$3\frac{1}{2} \times 3\frac{1}{2} \times 5$
3½ x3½ x4	$3\frac{1}{16} \times 3\frac{1}{16} \times 3\frac{1}{2}$	4 x2 x2½	$2\frac{5}{8} \times 2\frac{5}{8} \times 3\frac{5}{8}$	6 x4 x6	$5\frac{1}{8} \times 5\frac{1}{8} \times 5\frac{1}{8}$
3½ x3½ x3	$2\frac{1}{16} \times 2\frac{1}{16} \times 3\frac{1}{4}$	4 x2 x2	$2\frac{1}{4} \times 2\frac{1}{4} \times 3\frac{5}{8}$	6 x4 x5	$4\frac{9}{16} \times 4\frac{9}{16} \times 5\frac{1}{16}$
3½ x3½ x2½	$2\frac{9}{16} \times 2\frac{9}{16} \times 3\frac{5}{16}$	4 x2 x1½	$2\frac{1}{4} \times 2\frac{1}{4} \times 3\frac{5}{8}$	6 x4 x4	$4 \times 4 \times 5$
3½ x3½ x2	$2\frac{7}{16} \times 2\frac{7}{16} \times 3\frac{3}{8}$	4 x1½ x4	$3\frac{9}{16} \times 3\frac{9}{16} \times 3\frac{9}{16}$	6 x4 x3	$4 \times 4 \times 5$
3½ x3½ x1½	$2\frac{3}{16} \times 2\frac{3}{16} \times 3\frac{1}{4}$	4 x1¼ x4	$3\frac{9}{16} \times 3\frac{9}{16} \times 3\frac{9}{16}$	6 x3 x6	$5\frac{5}{16} \times 5\frac{5}{16} \times 5\frac{5}{16}$
3½ x3½ x1¼	$2\frac{1}{16} \times 2\frac{1}{16} \times 3\frac{1}{4}$	4 x1 x4	$3\frac{5}{8} \times 3\frac{5}{8} \times 3\frac{5}{8}$	6 x3 x5	$x \times x$
3½ x3½ x1	$1\frac{7}{8} \times 1\frac{7}{8} \times 3\frac{1}{4}$	4 x¾ x4	$3\frac{5}{8} \times 3\frac{5}{8} \times 3\frac{5}{8}$	6 x3 x4	$3\frac{7}{8} \times 3\frac{7}{8} \times 4\frac{3}{4}$
3½ x3 x3½	$3\frac{1}{16} \times 3\frac{1}{16} \times 3\frac{1}{16}$	4½ x4½ x4	$3\frac{5}{8} \times 3\frac{5}{8} \times 3\frac{1}{16}$	6 x2½ x6	$5\frac{1}{8} \times 4\frac{1}{8} \times 5\frac{1}{8}$
3½ x3 x3	$3 \times 3 \times 3\frac{1}{4}$	4½ x4½ x3½	$3\frac{3}{8} \times 3\frac{3}{8} \times 3\frac{3}{4}$	6 x2 x6	$5\frac{1}{8} \times 5\frac{1}{8} \times 5\frac{1}{8}$
3½ x3 x2½	$2\frac{1}{16} \times 2\frac{1}{16} \times 3\frac{5}{16}$	4½ x4½ x3	$3\frac{1}{16} \times 3\frac{1}{16} \times 3\frac{1}{16}$	6 x1½ x6	$5\frac{1}{8} \times 5\frac{1}{8} \times 5\frac{1}{8}$
3½ x3 x2	$2\frac{5}{16} \times 2\frac{5}{16} \times 3\frac{1}{4}$	4½ x4½ x2½	$2\frac{1}{16} \times 2\frac{1}{16} \times 3\frac{1}{16}$	6 x1¼ x6	$5\frac{1}{8} \times 5\frac{1}{8} \times 5\frac{1}{8}$
3½ x3 x1½	$2 \times 2 \times 3\frac{5}{16}$	4½ x4½ x2	$2\frac{1}{16} \times 2\frac{1}{16} \times 3\frac{1}{16}$	7 x7 x6	$5\frac{1}{4} \times 5\frac{1}{4} \times 5\frac{5}{8}$
3½ x3 x1¼	$2 \times 2 \times 3\frac{1}{4}$	4½ x4½ x1½	$2\frac{3}{8} \times 2\frac{3}{8} \times 3\frac{3}{4}$	7 x7 x5	$4\frac{5}{8} \times 4\frac{5}{8} \times 5\frac{9}{16}$
3½ x2½ x3½	$3\frac{7}{16} \times 3\frac{7}{16} \times 3\frac{7}{16}$	4½ x4½ x1¼	$2\frac{1}{8} \times 2\frac{1}{8} \times 3\frac{1}{16}$	7 x7 x4	$4\frac{1}{8} \times 4\frac{1}{8} \times 5\frac{3}{8}$
3½ x2½ x3	$3 \times 3 \times 3\frac{1}{4}$	5 x5 x6	$5\frac{1}{8} \times 5\frac{1}{8} \times 4\frac{1}{2}$	7 x7 x3½	$4\frac{1}{8} \times 4\frac{1}{8} \times 5\frac{3}{8}$
3½ x2½ x2½	$2\frac{1}{16} \times 2\frac{1}{16} \times 3\frac{5}{16}$	5 x5 x4½	$3\frac{7}{8} \times 3\frac{7}{8} \times 4\frac{1}{8}$	7 x7 x3	$3\frac{1}{2} \times 3\frac{1}{2} \times 5\frac{7}{16}$
3½ x2½ x2	$2\frac{3}{8} \times 2\frac{3}{8} \times 3\frac{3}{8}$	5 x5 x4	$3\frac{1}{16} \times 3\frac{1}{16} \times 4\frac{1}{8}$	7 x7 x2½	$3\frac{1}{16} \times 3\frac{1}{16} \times 5\frac{3}{8}$
3½ x2 x3½	$3\frac{1}{16} \times 3\frac{1}{16} \times 3\frac{1}{16}$	5 x5 x3½	$3\frac{1}{16} \times 3\frac{1}{16} \times 4\frac{1}{8}$	7 x6 x7	$5\frac{7}{8} \times 5\frac{7}{8} \times 5\frac{7}{8}$
3½ x2 x3	$3 \times 3 \times 3\frac{5}{16}$	5 x5 x3	$3\frac{1}{16} \times 3\frac{1}{16} \times 4\frac{1}{8}$	7 x6 x6	$x \times x$
3½ x2 x2½	$2\frac{1}{16} \times 2\frac{1}{16} \times 3\frac{5}{16}$	5 x5 x2½	$2\frac{7}{8} \times 2\frac{7}{8} \times 4\frac{1}{8}$	7 x6 x5	$x \times x$
3½ x1½ x3½	$3\frac{1}{16} \times 3\frac{1}{16} \times 3\frac{1}{16}$	5 x5 x2	$2\frac{1}{16} \times 2\frac{1}{16} \times 4\frac{1}{8}$	7 x5 x7	$x \times x$
3½ x1½ x3	$3 \times 3 \times 3\frac{5}{16}$	5 x5 x1½	$2\frac{3}{8} \times 2\frac{3}{8} \times 4\frac{1}{16}$	7 x5 x6	$x \times x$
3½ x1½ x2½	$2\frac{1}{16} \times 2\frac{1}{16} \times 3\frac{5}{16}$	5 x5 x1¼	$2\frac{1}{4} \times 2\frac{1}{4} \times 4$	7 x5 x5	$x \times x$
3½ x1¼ x3½	$3\frac{1}{16} \times 3\frac{1}{16} \times 3\frac{7}{16}$	5 x4 x5	$4\frac{5}{16} \times 4\frac{5}{16} \times 4\frac{5}{16}$	7 x4 x7	$5\frac{3}{4} \times 5\frac{3}{4} \times 5\frac{3}{4}$
3½ x1 x3½	$3\frac{1}{16} \times 3\frac{1}{16} \times 3\frac{1}{16}$	5 x4 x4½	$x \times x$	8 x8 x7	$6 \times 6 \times 6\frac{7}{16}$
4 x4 x6	$5 \times 5 \times 3\frac{7}{8}$	5 x4 x4	$3\frac{1}{16} \times 3\frac{1}{16} \times 4\frac{3}{16}$	8 x8 x6	$5\frac{3}{8} \times 5\frac{3}{8} \times 6\frac{3}{16}$
4 x4 x5	$4\frac{1}{4} \times 4\frac{1}{4} \times 3\frac{7}{8}$	5 x4 x3½	$3\frac{1}{16} \times 3\frac{1}{16} \times 4\frac{1}{4}$	8 x8 x5	$4\frac{3}{4} \times 4\frac{3}{4} \times 6\frac{1}{8}$
4 x4 x3½	$3\frac{3}{8} \times 3\frac{3}{8} \times 3\frac{9}{16}$	5 x4 x3	$3\frac{1}{8} \times 3\frac{1}{8} \times 4\frac{1}{16}$	8 x8 x4	$4\frac{3}{16} \times 4\frac{3}{16} \times 6$
4 x4 x3	$3 \times 3 \times 3\frac{1}{2}$	5 x4 x2½	$3 \times 3 \times 4\frac{1}{16}$		

List of Standard Sizes of Cast Iron Fittings

Reducing Tees—Continued

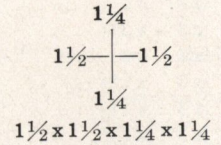
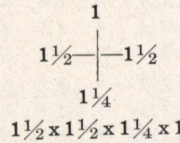
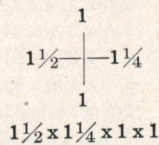
Size	Center to Face	
8x 8x 3 1/2.....	4 3/16 x 4 3/16 x 6	
8x 8x 3.....	3 5/8 x 3 5/8 x 5 15/16	
8x 8x 2 1/2.....	3 3/8 x 3 3/8 x 5 7/8	
8x 8x 2.....	3 x 3 x 5 5/8	
8x 7x 8.....	6 7/16 x 6 7/16 x 6 1/16	
8x 7x 6.....	5 3/8 x 5 3/8 x 6 3/16	
8x 6x 8.....	6 3/8 x 6 3/8 x 6 3/8	
8x 6x 7.....	x x	
8x 6x 6.....	5 3/8 x 5 3/8 x 6 1/4	
8x 5x 8.....	6 5/16 x 6 5/16 x 6 5/16	
8x 5x 5.....	x x	
8x 4x 8.....	6 5/16 x 6 5/16 x 6 5/16	
9x 9x 7.....	x x	
9x 9x 5.....	x x	
10x 10x 8.....	8 5/16 x 8 5/16 x 9	
10x 10x 6.....	7 1/4 x 7 1/4 x 8 15/16	
10x 10x 5.....	7 1/4 x 7 1/4 x 8 15/16	
10x 10x 4.....	6 3/8 x 6 3/8 x 8 1/16	
10x 10x 3.....	6 1/8 x 6 1/8 x 8 1/16	
10x 8x 10.....	9 9/16 x 9 9/16 x 9 9/16	
10x 8x 8.....	x x	
10x 6x 10.....	9 9/16 x 9 9/16 x 9 9/16	
10x 4x 10.....	9 9/16 x 9 9/16 x 9 9/16	
12x 12x 10.....	9 11/16 x 9 11/16 x 10 5/8	
12x 12x 8.....	8 5/16 x 8 5/16 x 10	
12x 12x 6.....	7 1/4 x 7 1/4 x 9 7/8	
12x 12x 5.....	7 1/4 x 7 1/4 x 9 7/8	
12x 12x 4.....	6 1/16 x 6 1/16 x 9 9/16	
12x 10x 12.....	10 11/16 x 10 11/16 x 10 11/16	
12x 8x 12.....	10 11/16 x 10 11/16 x 10 11/16	
12x 8x 10.....	x x	
12x 8x 8.....	x x	
12x 6x 12.....	10 11/16 x 10 11/16 x 10 11/16	
12x 4x 12.....	10 11/16 x 10 11/16 x 10 11/16	

Straight Crosses

Size	Center to Face	
3/8x 3/8x 3/8x 3/8	1 1/16 x 1 1/16 x 1 1/16 x 1 1/16	
1/2x 1/2x 1/2x 1/2	1 1/8 x 1 1/8 x 1 1/8 x 1 1/8	
3/4x 3/4x 3/4x 3/4	1 1/4 x 1 1/4 x 1 1/4 x 1 1/4	
1 x 1 x 1 x 1	1 1/2 x 1 1/2 x 1 1/2 x 1 1/2	
1 1/4x 1 1/4x 1 1/4x 1 1/4	1 3/4 x 1 3/4 x 1 3/4 x 1 3/4	
1 1/2x 1 1/2x 1 1/2x 1 1/2	1 15/16 x 1 15/16 x 1 15/16 x 1 15/16	
2 x 2 x 2 x 2	2 1/4 x 2 1/4 x 2 1/4 x 2 1/4	
2 1/2x 2 1/2x 2 1/2x 2 1/2	2 1/2 x 2 1/2 x 2 1/2 x 2 1/2	
3 x 3 x 3 x 3	2 13/16 x 2 13/16 x 2 13/16 x 2 13/16	
3 1/2x 3 1/2x 3 1/2x 3 1/2	3 1/4 x 3 1/4 x 3 1/4 x 3 1/4	
4 x 4 x 4 x 4	3 1/2 x 3 1/2 x 3 1/2 x 3 1/2	
4 1/2x 4 1/2x 4 1/2x 4 1/2	3 13/16 x 3 13/16 x 3 13/16 x 3 13/16	
5 x 5 x 5 x 5	4 3/8 x 4 3/8 x 4 3/8 x 4 3/8	
6 x 6 x 6 x 6	5 x 5 x 5 x 5	
7 x 7 x 7 x 7	6 x 6 x 6 x 6	
8 x 8 x 8 x 8	6 3/4 x 6 3/4 x 6 3/4 x 6 3/4	
9 x 9 x 9 x 9	8 1/4 x 8 1/4 x 8 1/4 x 8 1/4	
10 x 10 x 10 x 10	9 1/2 x 9 1/2 x 9 1/2 x 9 1/2	
12 x 12 x 12 x 12	10 1/2 x 10 1/2 x 10 1/2 x 10 1/2	

Reducing Crosses

Reducing Crosses are described as follows:



Size	Center to Face		Size	Center to Face	
3/4x 3/4x 1/2x 1/2.....	1 1/16 x 1 1/16 x 1 1/16 x 1 1/16		3 1/2x 3 1/2x 2x 2.....	2 7/16 x 2 7/16 x 3 3/8 x 3 3/8	
1 x 1 x 3/4x 3/4.....	1 3/8 x 1 3/8 x 1 1/16 x 1 1/16		3 1/2x 3 1/2x 1 1/2x 1 1/2.....	2 3/8 x 2 3/8 x 3 1/4 x 3 1/4	
1 x 1 x 1/2x 1/2.....	1 1/4 x 1 1/4 x 1 1/2 x 1 1/2		3 1/2x 3 1/2x 1 1/4x 1 1/4.....	2 1/8 x 2 1/8 x 3 1/4 x 3 1/4	
1 1/4x 1 1/4x 1 x 1.....	1 1/2 x 1 1/2 x 3/4 x 3/4		4 x 4 x 3 1/2x 3 1/2.....	3 5/8 x 3 5/8 x 3 1/8 x 3 1/8	
1 1/4x 1 1/4x 3/4x 3/4.....	1 3/8 x 1 3/8 x 1 1/16 x 1 1/16		4 x 4 x 3 x 3.....	3 x 3 x 3 1/8 x 3 1/8	
1 1/4x 1 1/4x 1/2x 1/2.....	1 3/8 x 1 3/8 x 1 1/16 x 1 1/16		4 x 4 x 2 1/2x 2 1/2.....	2 3/4 x 2 3/4 x 3 1/8 x 3 1/8	
1 1/2x 1 1/2x 1/4x 1/4.....	1 13/16 x 1 13/16 x 1 1/16 x 1 1/16		4 x 4 x 2 x 2.....	2 1/8 x 2 1/8 x 3 1/8 x 3 1/8	
1 1/2x 1 1/2x 1 x 1.....	1 9/16 x 1 9/16 x 7/8 x 7/8		4 x 4 x 1 1/2x 1 1/2.....	2 x 3/16 x 2 3/16 x 3 1/2 x 3 1/2	
1 1/2x 1 1/2x 3/4x 3/4.....	1 7/16 x 1 7/16 x 1 1/8 x 1 1/8		4 x 4 x 1 1/4x 1 1/4.....	2 1/8 x 2 1/8 x 3 1/8 x 3 1/8	
1 1/2x 1 1/2x 1/2x 1/2.....	1 7/16 x 1 7/16 x 1 1/8 x 1 1/8		5 x 5 x 4 x 4.....	3 5/8 x 3 5/8 x 4 1/8 x 4 1/8	
2 x 2 x 1 1/2x 1 1/2.....	2 x 2 x 2 1/16 x 2 1/16		5 x 5 x 3 x 3.....	3 1/4 x 3 1/4 x 4 1/8 x 4 1/8	
2 x 2 x 1 1/4x 1 1/4.....	1 7/8 x 1 7/8 x 2 1/8 x 2 1/8		5 x 5 x 2 1/2x 2 1/2.....	2 13/16 x 2 13/16 x 4 1/8 x 4 1/8	
2 x 2 x 1 x 1.....	1 5/8 x 1 5/8 x 2 1/8 x 2 1/8		5 x 5 x 2 x 2.....	2 1/2 x 2 1/2 x 4 1/8 x 4 1/8	
2 x 2 x 3/4x 3/4.....	1 1/2 x 1 1/2 x 2 1/16 x 2 1/16		6 x 6 x 5 x 5.....	5 x 5 x 5 x 5	
2 1/2x 2 1/2x 2 x 2.....	2 1/16 x 2 1/16 x 2 1/2 x 2 1/2		6 x 6 x 4 x 4.....	3 13/16 x 3 13/16 x 4 15/16 x 4 15/16	
2 1/2x 2 1/2x 1 1/2x 1 1/2.....	2 x 2 x 2 1/2 x 2 1/2		6 x 6 x 3 1/2x 3 1/2.....	3 13/16 x 3 13/16 x 4 15/16 x 4 15/16	
2 1/2x 2 1/2x 1 1/4x 1 1/4.....	1 11/16 x 1 11/16 x 2 1/16 x 2 1/16		6 x 6 x 3 x 3.....	3 13/16 x 3 13/16 x 4 15/16 x 4 15/16	
2 1/2x 2 1/2x 1 x 1.....	1 1/16 x 1 1/16 x 2 1/2 x 2 1/2		6 x 6 x 2 1/2x 2 1/2.....	2 7/8 x 2 7/8 x 4 3/4 x 4 3/4	
2 1/2x 2 1/2x 3/4x 3/4.....	1 1/16 x 1 1/16 x 2 1/2 x 2 1/2		6 x 6 x 2 x 2.....	2 7/8 x 2 7/8 x 4 3/4 x 4 3/4	
3 x 3 x 2 1/2x 2 1/2.....	2 1/2 x 2 1/2 x 2 15/16 x 2 15/16		7 x 7 x 6 x 6.....	6 x 6 x 6 x 6	
3 x 3 x 2 x 2.....	2 1/4 x 2 1/4 x 2 15/16 x 2 15/16		7 x 7 x 5 x 5.....	6 x 6 x 6 x 6	
3 x 3 x 1 1/2x 1 1/2.....	2 1/16 x 2 1/16 x 2 15/16 x 2 15/16		8 x 8x 7x 7.....	6 9/16 x 6 9/16 x 6 9/16 x 6 9/16	
3 x 3 x 1 1/4x 1 1/4.....	1 11/16 x 1 11/16 x 2 15/16 x 2 15/16		8 x 8x 6x 6.....	5 15/16 x 5 15/16 x 6 1/8 x 6 1/8	
3 x 3 x 1 x 1.....	1 11/16 x 1 11/16 x 2 7/8 x 2 7/8		10x 10x 8x 8.....	8 5/16 x 8 5/16 x 9 x 9	
3 x 3 x 3/4x 3/4.....	1 11/16 x 1 11/16 x 2 7/8 x 2 7/8		10x 10x 7x 7.....	x x x x	
3 1/2x 3 1/2x 3 x 3.....	2 15/16 x 2 15/16 x 3 5/16 x 3 5/16		12x 12x 10x 10.....	x x x x	
3 1/2x 3 1/2x 2 1/2x 2 1/2.....	2 9/16 x 2 9/16 x 3 5/16 x 3 5/16		12x 12x 8x 8.....	8 15/16 x 8 15/16 x 10 x 10	

Straight Y-Bends

Size	Center to Face		Size	Center to Face	
1/2x 1/2x 1/2.....	9/16 x 1 1/2 x 1 1/2		3 1/2x 3 1/2x 3 1/2.....	2 3/8 x 6 3/8 x 6 3/8	
3/4x 3/4x 3/4.....	1 x 2 1/8 x 2 1/8		4 x 4 x 4.....	2 3/8 x 7 1/8 x 7 1/8	
1 x 1 x 1.....	1 1/8 x 2 3/8 x 2 3/8		4 1/2x 4 1/2x 4 1/2.....	2 1/2 x 7 1/2 x 7 1/2	
1 1/4x 1 1/4x 1 1/4.....	1 1/4 x 3 x 3		5 x 5 x 5.....	2 3/4 x 8 1/4 x 8 1/4	
1 1/2x 1 1/2x 1 1/2.....	1 3/8 x 3 1/2 x 3 1/2		6 x 6 x 6.....	3 1/4 x 9 1/8 x 9 1/8	
2 x 2 x 2.....	1 1/2 x 4 x 4		7 x 7 x 7.....	3 9/16 x 11 1/4 x 11 1/4	
2 1/2x 2 1/2x 2 1/2.....	1 5/8 x 4 5/8 x 4 5/8		8 x 8 x 8.....	3 7/8 x 12 3/4 x 12 3/4	
3 x 3 x 3.....	2 x 5 1/2 x 5 1/2				

List of Standard Sizes of Cast Iron Fittings

Reducing Couplings

Size	Face to Face	Size	Face to Face	Size	Face to Face
$\frac{1}{2}$ x $\frac{3}{8}$	$1\frac{1}{16}$	$2\frac{1}{2}$ x $\frac{3}{4}$	$3\frac{5}{16}$	$4\frac{1}{2}$ x 2	$4\frac{9}{16}$
$\frac{1}{2}$ x $\frac{1}{4}$	$1\frac{1}{8}$	3 x $2\frac{1}{2}$	$3\frac{9}{16}$	$4\frac{1}{2}$ x $1\frac{1}{2}$	$4\frac{9}{16}$
$\frac{3}{4}$ x $\frac{1}{2}$	$1\frac{3}{8}$	3 x 2	$3\frac{9}{16}$	$4\frac{1}{2}$ x $1\frac{1}{4}$	$4\frac{9}{16}$
$\frac{3}{4}$ x $\frac{3}{8}$	$1\frac{3}{4}$	3 x $1\frac{1}{2}$	$3\frac{9}{16}$	5 x $4\frac{1}{2}$	$5\frac{1}{4}$
1 x $\frac{3}{4}$	$1\frac{7}{8}$	3 x $1\frac{1}{4}$	$3\frac{9}{16}$	5 x 4	$5\frac{1}{4}$
1 x $\frac{1}{2}$	$1\frac{7}{8}$	3 x 1	$3\frac{9}{16}$	5 x $3\frac{1}{2}$	$5\frac{1}{4}$
1 x $\frac{3}{8}$	$1\frac{7}{8}$	$3\frac{1}{2}$ x 3	4	5 x 3	$5\frac{1}{4}$
$1\frac{1}{4}$ x 1	$2\frac{1}{8}$	$3\frac{1}{2}$ x $2\frac{1}{2}$	4	5 x $2\frac{1}{2}$	$5\frac{1}{4}$
$1\frac{1}{4}$ x $\frac{3}{4}$	$2\frac{1}{8}$	$3\frac{1}{2}$ x 2	4	5 x 2	$5\frac{1}{4}$
$1\frac{1}{4}$ x $\frac{1}{2}$	$2\frac{1}{8}$	$3\frac{1}{2}$ x $1\frac{1}{2}$	4	5 x $1\frac{1}{2}$	$5\frac{1}{4}$
$1\frac{1}{2}$ x $1\frac{1}{4}$	$2\frac{3}{8}$	$3\frac{1}{2}$ x $1\frac{1}{4}$	4	5 x $1\frac{1}{4}$	$5\frac{1}{4}$
$1\frac{1}{2}$ x 1	$2\frac{3}{8}$	$3\frac{1}{2}$ x 1	4	6 x 5	$5\frac{5}{8}$
$1\frac{1}{2}$ x $\frac{3}{4}$	$2\frac{3}{8}$	4 x $3\frac{1}{2}$	$4\frac{5}{16}$	6 x 4	$5\frac{5}{8}$
$1\frac{1}{2}$ x $\frac{1}{2}$	$2\frac{3}{8}$	4 x 3	$4\frac{5}{16}$	6 x 3	$5\frac{5}{8}$
2 x $1\frac{1}{2}$	$2\frac{3}{4}$	4 x $2\frac{1}{2}$	$4\frac{5}{16}$	6 x $2\frac{1}{2}$	$5\frac{5}{8}$
2 x $1\frac{1}{4}$	$2\frac{3}{4}$	4 x 2	$4\frac{5}{16}$	6 x 2	$5\frac{5}{8}$
2 x 1	$2\frac{3}{4}$	4 x $1\frac{1}{2}$	$4\frac{5}{16}$	7 x 6	6
2 x $\frac{3}{4}$	$2\frac{3}{4}$	4 x $1\frac{1}{4}$	$4\frac{5}{16}$	7 x 5	6
2 x $\frac{1}{2}$	$2\frac{3}{4}$	4 x 1	$4\frac{5}{16}$	7 x 4	6
$2\frac{1}{2}$ x 2	$3\frac{1}{8}$	$4\frac{1}{2}$ x 4	$4\frac{9}{16}$	8 x 6	$6\frac{1}{16}$
$2\frac{1}{2}$ x $1\frac{1}{2}$	$3\frac{5}{16}$	$4\frac{1}{2}$ x $3\frac{1}{2}$	$4\frac{9}{16}$	8 x 5	$6\frac{1}{16}$
$2\frac{1}{2}$ x $1\frac{1}{4}$	$3\frac{5}{16}$	$4\frac{1}{2}$ x 3	$4\frac{9}{16}$	8 x 4	$6\frac{1}{16}$
$2\frac{1}{2}$ x 1	$3\frac{5}{16}$	$4\frac{1}{2}$ x $2\frac{1}{2}$	$4\frac{9}{16}$		

Eccentric Reducing Couplings

Size	Face to Face	Size	Face to Face	Size	Face to Face
$1\frac{1}{4}$ x $\frac{3}{4}$	$1\frac{3}{4}$	$3\frac{1}{2}$ x $1\frac{1}{4}$	3	5 x 3	$3\frac{1}{2}$
$1\frac{1}{2}$ x 1	$1\frac{7}{8}$	$3\frac{1}{2}$ x $1\frac{1}{2}$	3	$5\frac{1}{2}$ x $3\frac{1}{2}$	$3\frac{1}{2}$
$1\frac{1}{2}$ x $1\frac{1}{4}$	$1\frac{7}{8}$	$3\frac{1}{2}$ x 2	3	5 x 4	$3\frac{1}{2}$
2 x $1\frac{1}{4}$	$2\frac{1}{8}$	$3\frac{1}{2}$ x $2\frac{1}{2}$	3	6 x 2	$3\frac{3}{4}$
2 x $1\frac{1}{2}$	$2\frac{1}{8}$	$3\frac{1}{2}$ x 3	3	$6\frac{1}{2}$ x $2\frac{1}{2}$	$3\frac{3}{4}$
$2\frac{1}{2}$ x $1\frac{1}{4}$	$2\frac{1}{4}$	4 x $2\frac{1}{2}$	$3\frac{1}{8}$	6 x 3	$3\frac{3}{4}$
$2\frac{1}{2}$ x $1\frac{1}{2}$	$2\frac{1}{4}$	4 x 3	$3\frac{1}{8}$	$6\frac{1}{2}$ x $3\frac{1}{2}$	$3\frac{3}{4}$
$2\frac{1}{2}$ x 2	$2\frac{1}{4}$	4 x $3\frac{1}{2}$	$3\frac{1}{8}$	6 x 4	$3\frac{3}{4}$
3 x 2	$2\frac{1}{2}$	5 x 2	$3\frac{1}{2}$	6 x 5	$3\frac{3}{4}$
3 x $2\frac{1}{2}$	$2\frac{1}{2}$	5 x $2\frac{1}{2}$	$3\frac{1}{2}$	8 x 5	$4\frac{3}{8}$

Single Sweep Long-Turn Tees

Size	Center to Face	Size	Center to Face	Size	Center to Face
1 x 1 x 1	$2\frac{1}{4}$ x $2\frac{1}{4}$ x $1\frac{1}{2}$	3 x 3 x 3	$5\frac{1}{2}$ x $5\frac{1}{2}$ x $2\frac{1}{8}$	5 x 5 x 5	7 x 7 x $4\frac{3}{8}$
$1\frac{1}{4}$ x $1\frac{1}{4}$ x $1\frac{1}{4}$	$2\frac{5}{8}$ x $2\frac{5}{8}$ x $1\frac{3}{4}$	$3\frac{1}{2}$ x $3\frac{1}{2}$ x $3\frac{1}{2}$	$5\frac{3}{4}$ x $5\frac{3}{4}$ x $3\frac{1}{4}$	6 x 6 x 6	$7\frac{1}{2}$ x $7\frac{1}{2}$ x 5
$1\frac{1}{2}$ x $1\frac{1}{2}$ x $1\frac{1}{2}$	3 x 3 x 2	4 x 4 x 4	6 x 6 x $3\frac{1}{8}$	7 x 7 x 7	$8\frac{7}{8}$ x $8\frac{7}{8}$ x 6
2 x 2 x 2	$3\frac{5}{8}$ x $3\frac{5}{8}$ x $2\frac{7}{8}$	$4\frac{1}{2}$ x $4\frac{1}{2}$ x $4\frac{1}{2}$	$6\frac{1}{4}$ x $6\frac{1}{4}$ x $3\frac{1}{8}$	8 x 8 x 8	$9\frac{1}{2}$ x $9\frac{1}{2}$ x $6\frac{1}{8}$
$2\frac{1}{2}$ x $2\frac{1}{2}$ x $2\frac{1}{2}$	$4\frac{3}{4}$ x $4\frac{3}{4}$ x $2\frac{1}{8}$				

Reducing Twin Elbows, for Hot Water

Size	Center to Face	Size	Center to Face	Size	Center to Face
$\frac{3}{4}$ x $\frac{3}{4}$ x 1	$2\frac{9}{16}$ x $2\frac{9}{16}$ x $2\frac{9}{16}$	2 x 2 x $2\frac{1}{2}$	$4\frac{3}{16}$ x $4\frac{3}{16}$ x $4\frac{1}{8}$	$3\frac{1}{2}$ x $3\frac{1}{2}$ x 5	$5\frac{15}{16}$ x $5\frac{15}{16}$ x $5\frac{1}{4}$
1 x 1 x $1\frac{1}{4}$	$2\frac{5}{8}$ x $2\frac{5}{8}$ x $2\frac{3}{8}$	$2\frac{1}{2}$ x $2\frac{1}{2}$ x 3	$4\frac{3}{4}$ x $4\frac{3}{4}$ x $4\frac{3}{8}$	4 x 4 x 5	$5\frac{13}{16}$ x $5\frac{13}{16}$ x $5\frac{7}{16}$
$1\frac{1}{4}$ x $1\frac{1}{4}$ x $1\frac{1}{2}$	$2\frac{7}{8}$ x $2\frac{7}{8}$ x $2\frac{7}{8}$	3 x 3 x 4	$4\frac{15}{16}$ x $4\frac{15}{16}$ x $4\frac{7}{16}$	5 x 5 x 6	$7\frac{3}{16}$ x $7\frac{3}{16}$ x $6\frac{13}{16}$
$1\frac{1}{2}$ x $1\frac{1}{2}$ x 2	$3\frac{7}{16}$ x $3\frac{7}{16}$ x $3\frac{1}{8}$				

Long-Turn Elbows

Size	Center to Face
1 x 1	$2\frac{1}{4}$ x $2\frac{1}{4}$
$1\frac{1}{4}$ x $1\frac{1}{4}$	$2\frac{5}{8}$ x $2\frac{5}{8}$
$1\frac{1}{2}$ x $1\frac{1}{2}$	3 x 3
2 x 2	$3\frac{5}{8}$ x $3\frac{5}{8}$
$2\frac{1}{2}$ x $2\frac{1}{2}$	$4\frac{3}{4}$ x $4\frac{3}{4}$
3 x 3	$5\frac{1}{2}$ x $5\frac{1}{2}$
$3\frac{1}{2}$ x $3\frac{1}{2}$	$5\frac{3}{4}$ x $5\frac{3}{4}$
4 x 4	6 x 6
$4\frac{1}{2}$ x $4\frac{1}{2}$	$6\frac{1}{4}$ x $6\frac{1}{4}$
5 x 5	7 x 7
6 x 6	$7\frac{1}{2}$ x $7\frac{1}{2}$
7 x 7	$8\frac{7}{8}$ x $8\frac{7}{8}$
8 x 8	$9\frac{1}{2}$ x $9\frac{1}{2}$

Double Sweep Long-Turn Tees

Size	Center to Face
1 x 1 x 1	$2\frac{1}{4}$ x $2\frac{1}{4}$ x $2\frac{1}{4}$
$1\frac{1}{4}$ x $1\frac{1}{4}$ x $1\frac{1}{4}$	$2\frac{5}{8}$ x $2\frac{5}{8}$ x $2\frac{5}{8}$
$1\frac{1}{2}$ x $1\frac{1}{2}$ x $1\frac{1}{2}$	3 x 3 x 3
2 x 2 x 2	$3\frac{5}{8}$ x $3\frac{5}{8}$ x $3\frac{5}{8}$
$2\frac{1}{2}$ x $2\frac{1}{2}$ x $2\frac{1}{2}$	$4\frac{3}{4}$ x $4\frac{3}{4}$ x $4\frac{3}{4}$
3 x 3 x 3	$5\frac{1}{2}$ x $5\frac{1}{2}$ x $5\frac{1}{2}$
$3\frac{1}{2}$ x $3\frac{1}{2}$ x $3\frac{1}{2}$	$5\frac{3}{4}$ x $5\frac{3}{4}$ x $5\frac{3}{4}$
4 x 4 x 4	6 x 6 x 6
$4\frac{1}{2}$ x $4\frac{1}{2}$ x $4\frac{1}{2}$	$6\frac{1}{4}$ x $6\frac{1}{4}$ x $6\frac{1}{4}$
5 x 5 x 5	7 x 7 x 7
6 x 6 x 6	$7\frac{1}{2}$ x $7\frac{1}{2}$ x $7\frac{1}{2}$
7 x 7 x 7	$8\frac{7}{8}$ x $8\frac{7}{8}$ x $8\frac{7}{8}$
8 x 8 x 8	$9\frac{1}{2}$ x $9\frac{1}{2}$ x $9\frac{1}{2}$

Long-Turn Crosses

Size	Center to Face
1 x 1 x 1 x 1	$2\frac{1}{4}$ x $2\frac{1}{4}$ x $2\frac{1}{4}$ x $2\frac{1}{4}$
$1\frac{1}{4}$ x $1\frac{1}{4}$ x $1\frac{1}{4}$ x $1\frac{1}{4}$	$2\frac{5}{8}$ x $2\frac{5}{8}$ x $2\frac{5}{8}$ x $2\frac{5}{8}$
$1\frac{1}{2}$ x $1\frac{1}{2}$ x $1\frac{1}{2}$ x $1\frac{1}{2}$	3 x 3 x 3 x 3
2 x 2 x 2 x 2	$3\frac{5}{8}$ x $3\frac{5}{8}$ x $3\frac{5}{8}$ x $3\frac{5}{8}$
$2\frac{1}{2}$ x $2\frac{1}{2}$ x $2\frac{1}{2}$ x $2\frac{1}{2}$	$4\frac{3}{4}$ x $4\frac{3}{4}$ x $4\frac{3}{4}$ x $4\frac{3}{4}$
3 x 3 x 3 x 3	$5\frac{1}{2}$ x $5\frac{1}{2}$ x $5\frac{1}{2}$ x $5\frac{1}{2}$
$3\frac{1}{2}$ x $3\frac{1}{2}$ x $3\frac{1}{2}$ x $3\frac{1}{2}$	$5\frac{3}{4}$ x $5\frac{3}{4}$ x $5\frac{3}{4}$ x $5\frac{3}{4}$
4 x 4 x 4 x 4	6 x 6 x 6 x 6
$4\frac{1}{2}$ x $4\frac{1}{2}$ x $4\frac{1}{2}$ x $4\frac{1}{2}$	$6\frac{1}{4}$ x $6\frac{1}{4}$ x $6\frac{1}{4}$ x $6\frac{1}{4}$
5 x 5 x 5 x 5	7 x 7 x 7 x 7
6 x 6 x 6 x 6	$7\frac{1}{2}$ x $7\frac{1}{2}$ x $7\frac{1}{2}$ x $7\frac{1}{2}$
7 x 7 x 7 x 7	$8\frac{7}{8}$ x $8\frac{7}{8}$ x $8\frac{7}{8}$ x $8\frac{7}{8}$
8 x 8 x 8 x 8	$9\frac{1}{2}$ x $9\frac{1}{2}$ x $9\frac{1}{2}$ x $9\frac{1}{2}$

List of Sizes of Extra Heavy Cast Iron Screwed Fittings

For Steam Working Pressure up to 250 Pounds

Straight Elbows, Extra Heavy

Size	Center to Face
$\frac{1}{2}$ x $\frac{1}{2}$	$1\frac{5}{32}$ x $1\frac{5}{32}$
$\frac{3}{4}$ x $\frac{3}{4}$	$1\frac{5}{16}$ x $1\frac{5}{16}$
1 x 1.....	$1\frac{9}{16}$ x $1\frac{9}{16}$
$1\frac{1}{4}$ x $1\frac{1}{4}$	$1\frac{15}{16}$ x $1\frac{15}{16}$
$1\frac{1}{2}$ x $1\frac{1}{2}$	$2\frac{3}{16}$ x $2\frac{3}{16}$
2 x 2.....	$2\frac{1}{2}$ x $2\frac{1}{2}$
$2\frac{1}{2}$ x $2\frac{1}{2}$	$2\frac{7}{8}$ x $2\frac{7}{8}$
3 x 3.....	$3\frac{3}{8}$ x $3\frac{3}{8}$
$3\frac{1}{2}$ x $3\frac{1}{2}$	$3\frac{3}{4}$ x $3\frac{3}{4}$
4 x 4.....	4 x 4
5 x 5.....	5 x 5
6 x 6.....	$5\frac{9}{16}$ x $5\frac{9}{16}$

Reducing Elbows, Extra Heavy

Size	Center to Face
$\frac{3}{4}$ x $\frac{1}{2}$	$1\frac{5}{16}$ x $1\frac{1}{4}$
1 x $\frac{3}{4}$	$1\frac{3}{8}$ x $1\frac{9}{16}$
$1\frac{1}{4}$ x 1.....	$1\frac{3}{4}$ x $1\frac{13}{16}$
$1\frac{1}{2}$ x $1\frac{1}{4}$	2 x $2\frac{1}{8}$
2 x $1\frac{1}{2}$	$2\frac{1}{4}$ x $2\frac{3}{8}$
2 x $1\frac{1}{4}$	$2\frac{3}{16}$ x $2\frac{3}{8}$
$2\frac{1}{2}$ x 2.....	$2\frac{5}{8}$ x $2\frac{7}{8}$
3 x $2\frac{1}{2}$	$2\frac{15}{16}$ x $3\frac{3}{16}$
3 x 2.....	$2\frac{3}{4}$ x $3\frac{3}{16}$
4 x 3.....	$3\frac{1}{2}$ x $3\frac{7}{8}$
5 x 4.....	$4\frac{5}{16}$ x $4\frac{5}{8}$

45° Elbows, Extra Heavy

Size	Center to Face
1 x 1.....	$1\frac{3}{16}$ x $1\frac{3}{16}$
$1\frac{1}{4}$ x $1\frac{1}{4}$	$1\frac{7}{16}$ x $1\frac{7}{16}$
$1\frac{1}{2}$ x $1\frac{1}{2}$	$1\frac{9}{16}$ x $1\frac{9}{16}$
2 x 2.....	$1\frac{13}{16}$ x $1\frac{13}{16}$
$2\frac{1}{2}$ x $2\frac{1}{2}$	$2\frac{1}{8}$ x $2\frac{1}{8}$

45° Elbows, Extra Heavy

(Continued)

Size	Center to Face
3 x 3.....	$2\frac{7}{16}$ x $2\frac{7}{16}$
$3\frac{1}{2}$ x $3\frac{1}{2}$	$2\frac{9}{16}$ x $2\frac{9}{16}$
4 x 4.....	$2\frac{3}{4}$ x $2\frac{3}{4}$
5 x 5.....	$3\frac{1}{4}$ x $3\frac{1}{4}$
6 x 6.....	$3\frac{5}{8}$ x $3\frac{5}{8}$

Crosses, Extra Heavy

Size	Center to Face
1 x 1 x 1 x 1.....	$1\frac{9}{16}$ x $1\frac{9}{16}$ x $1\frac{9}{16}$ x $1\frac{9}{16}$
$1\frac{1}{4}$ x $1\frac{1}{4}$ x $1\frac{1}{4}$ x $1\frac{1}{4}$	$1\frac{15}{16}$ x $1\frac{15}{16}$ x $1\frac{15}{16}$ x $1\frac{15}{16}$
$1\frac{1}{2}$ x $1\frac{1}{2}$ x $1\frac{1}{2}$ x $1\frac{1}{2}$	$2\frac{3}{16}$ x $2\frac{3}{16}$ x $2\frac{3}{16}$ x $2\frac{3}{16}$
2 x 2 x 2 x 2.....	$2\frac{1}{2}$ x $2\frac{1}{2}$ x $2\frac{1}{2}$ x $2\frac{1}{2}$
$2\frac{1}{2}$ x $2\frac{1}{2}$ x $2\frac{1}{2}$ x $2\frac{1}{2}$	$2\frac{7}{8}$ x $2\frac{7}{8}$ x $2\frac{7}{8}$ x $2\frac{7}{8}$
3 x 3 x 3 x 3.....	$3\frac{3}{8}$ x $3\frac{3}{8}$ x $3\frac{3}{8}$ x $3\frac{3}{8}$
$3\frac{1}{2}$ x $3\frac{1}{2}$ x $3\frac{1}{2}$ x $3\frac{1}{2}$	$3\frac{3}{4}$ x $3\frac{3}{4}$ x $3\frac{3}{4}$ x $3\frac{3}{4}$
4 x 4 x 4 x 4.....	4 x 4 x 4 x 4
5 x 5 x 5 x 5.....	5 x 5 x 5 x 5
6 x 6 x 6 x 6.....	$5\frac{9}{16}$ x $5\frac{9}{16}$ x $5\frac{9}{16}$ x $5\frac{9}{16}$

Tees, Extra Heavy

Size	Center to Face
$\frac{1}{2}$ x $\frac{1}{2}$ x $\frac{1}{2}$	$1\frac{5}{32}$ x $1\frac{5}{32}$ x $1\frac{5}{32}$
$\frac{3}{4}$ x $\frac{3}{4}$ x $\frac{3}{4}$	$1\frac{5}{16}$ x $1\frac{5}{16}$ x $1\frac{5}{16}$
1 x 1 x 1.....	$1\frac{9}{16}$ x $1\frac{9}{16}$ x $1\frac{9}{16}$
$1\frac{1}{4}$ x $1\frac{1}{4}$ x $1\frac{1}{4}$	$1\frac{15}{16}$ x $1\frac{15}{16}$ x $1\frac{15}{16}$
$1\frac{1}{2}$ x $1\frac{1}{2}$ x $1\frac{1}{2}$	$2\frac{3}{16}$ x $2\frac{3}{16}$ x $2\frac{3}{16}$
2 x 2 x 2.....	$2\frac{1}{2}$ x $2\frac{1}{2}$ x $2\frac{1}{2}$
$2\frac{1}{2}$ x $2\frac{1}{2}$ x $2\frac{1}{2}$	$2\frac{7}{8}$ x $2\frac{7}{8}$ x $2\frac{7}{8}$
3 x 3 x 3.....	$3\frac{3}{8}$ x $3\frac{3}{8}$ x $3\frac{3}{8}$
$3\frac{1}{2}$ x $3\frac{1}{2}$ x $3\frac{1}{2}$	$3\frac{3}{4}$ x $3\frac{3}{4}$ x $3\frac{3}{4}$
4 x 4 x 4.....	4 x 4 x 4
5 x 5 x 5.....	5 x 5 x 5
6 x 6 x 6.....	$5\frac{9}{16}$ x $5\frac{9}{16}$ x $5\frac{9}{16}$

Reducing Tees, Extra Heavy

Size	Center to Face
1 x 1 x $\frac{3}{4}$	$1\frac{3}{8}$ x $1\frac{3}{8}$ x $1\frac{9}{16}$
1 x 1 x $\frac{1}{2}$	$1\frac{7}{32}$ x $1\frac{7}{32}$ x $1\frac{1}{2}$
1 x $\frac{3}{4}$ x $\frac{1}{2}$	$1\frac{1}{4}$ x $1\frac{1}{4}$ x $1\frac{1}{2}$
$1\frac{1}{4}$ x $1\frac{1}{4}$ x 1.....	$1\frac{3}{4}$ x $1\frac{3}{4}$ x $1\frac{13}{16}$
$1\frac{1}{4}$ x $1\frac{1}{4}$ x $\frac{3}{4}$	$1\frac{9}{16}$ x $1\frac{9}{16}$ x $1\frac{9}{16}$
$1\frac{1}{4}$ x 1 x $\frac{1}{2}$	$1\frac{3}{8}$ x $1\frac{3}{8}$ x $1\frac{11}{16}$
$1\frac{1}{2}$ x $1\frac{1}{2}$ x $1\frac{1}{4}$	2 x 2 x $2\frac{1}{8}$
$1\frac{1}{2}$ x $1\frac{1}{2}$ x 1.....	$1\frac{13}{16}$ x $1\frac{13}{16}$ x 2
$1\frac{1}{2}$ x $1\frac{1}{2}$ x $\frac{1}{2}$	$1\frac{1}{2}$ x $1\frac{1}{2}$ x $1\frac{7}{8}$
$1\frac{1}{2}$ x $1\frac{1}{4}$ x $\frac{1}{2}$	$1\frac{1}{2}$ x $1\frac{1}{2}$ x $1\frac{7}{8}$
2 x 2 x $1\frac{1}{2}$	$2\frac{1}{4}$ x $2\frac{1}{4}$ x $2\frac{3}{8}$
2 x 2 x $1\frac{1}{4}$	$2\frac{3}{16}$ x $2\frac{3}{16}$ x $2\frac{3}{8}$
2 x 2 x $\frac{1}{2}$	$1\frac{5}{8}$ x $1\frac{5}{8}$ x $2\frac{1}{4}$
2 x $1\frac{1}{2}$ x $\frac{1}{2}$	$1\frac{5}{8}$ x $1\frac{5}{8}$ x $2\frac{1}{4}$
$2\frac{1}{2}$ x $2\frac{1}{2}$ x 2.....	$2\frac{5}{8}$ x $2\frac{5}{8}$ x $2\frac{7}{8}$
$2\frac{1}{2}$ x $2\frac{1}{2}$ x $1\frac{1}{2}$	$2\frac{3}{8}$ x $2\frac{3}{8}$ x $2\frac{3}{4}$
3 x 3 x $2\frac{1}{2}$	$2\frac{15}{16}$ x $2\frac{15}{16}$ x $3\frac{3}{16}$
3 x 3 x 2.....	$2\frac{3}{4}$ x $2\frac{3}{4}$ x $3\frac{3}{16}$
3 x 3 x $1\frac{1}{2}$	$2\frac{9}{16}$ x $2\frac{9}{16}$ x $3\frac{1}{8}$
$3\frac{1}{2}$ x $3\frac{1}{2}$ x 3.....	$3\frac{1}{2}$ x $3\frac{1}{2}$ x $3\frac{3}{4}$
$3\frac{1}{2}$ x $3\frac{1}{2}$ x $2\frac{1}{2}$	$3\frac{1}{16}$ x $3\frac{1}{16}$ x $3\frac{9}{16}$
$3\frac{1}{2}$ x $3\frac{1}{2}$ x 2.....	$2\frac{7}{8}$ x $2\frac{7}{8}$ x $3\frac{5}{8}$
$3\frac{1}{2}$ x $3\frac{1}{2}$ x $1\frac{1}{2}$	$2\frac{5}{8}$ x $2\frac{5}{8}$ x $3\frac{1}{16}$
4 x 4 x 3.....	$3\frac{1}{2}$ x $3\frac{1}{2}$ x $3\frac{7}{8}$
4 x 4 x $2\frac{1}{2}$	$3\frac{1}{4}$ x $3\frac{1}{4}$ x $3\frac{7}{8}$
4 x 4 x 2.....	3 x 3 x $3\frac{3}{4}$
4 x 4 x $1\frac{1}{2}$	$2\frac{11}{16}$ x $2\frac{11}{16}$ x $3\frac{3}{4}$
5 x 5 x 4.....	$4\frac{5}{16}$ x $4\frac{5}{16}$ x $4\frac{5}{8}$
5 x 5 x $3\frac{1}{2}$	$4\frac{1}{16}$ x $4\frac{1}{16}$ x $4\frac{5}{8}$
5 x 5 x 3.....	$3\frac{3}{4}$ x $3\frac{3}{4}$ x $4\frac{1}{2}$
5 x 5 x $2\frac{1}{2}$	$3\frac{1}{2}$ x $3\frac{1}{2}$ x $4\frac{3}{8}$
5 x 5 x 2.....	$3\frac{1}{8}$ x $3\frac{1}{8}$ x $4\frac{1}{4}$
6 x 6 x 5.....	5 x 5 x $5\frac{5}{8}$
6 x 6 x 4.....	$4\frac{5}{8}$ x $4\frac{5}{8}$ x $5\frac{3}{8}$
6 x 6 x $3\frac{1}{2}$	$4\frac{1}{4}$ x $4\frac{1}{4}$ x $5\frac{1}{4}$
6 x 6 x 3.....	4 x 4 x $5\frac{1}{16}$
6 x 6 x $2\frac{1}{2}$	$3\frac{5}{8}$ x $3\frac{5}{8}$ x $5\frac{1}{16}$
6 x 6 x 2.....	$3\frac{3}{8}$ x $3\frac{3}{8}$ x 5

Cast Iron Fittings—"K" Standard

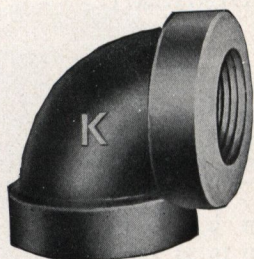


Fig. 292

Straight Elbows

Size.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Price, Plain.....	.05	.05	.06	.08	.10 1/2	.16	.20	.28	.50	.75
Price, Galvanized.	.10	.10	.12	.16	.21	.32	.40	.56	1.00	1.50
Size.....	3 1/2	4	4 1/2	5	6	7	8	9	10	12
Price, Plain.....	1.05	1.20	1.75	2.00	2.75	4.70	6.75	9.00	13.50	20.00
Price, Galvanized.	2.10	2.40	3.50	4.00	5.50	9.40	13.50	18.00	27.00	40.00

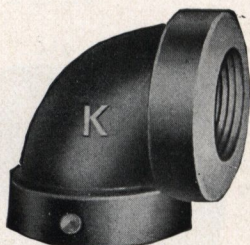


Fig. 294

Right and Left Elbows

Size.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Price, Plain.....	.06	.06	.07	.09	.12	.18	.23	.32	.60	.85
Price, Galvanized.	.12	.12	.14	.18	.24	.36	.46	.64	1.20	1.70
Size.....	3 1/2	4	4 1/2	5	6	7	8	9	10	12
Price, Plain.....	1.20	1.40	....	....	....	....	....	....	....	....
Price, Galvanized.	2.40	2.80	....	....	....	....	....	....	....	....

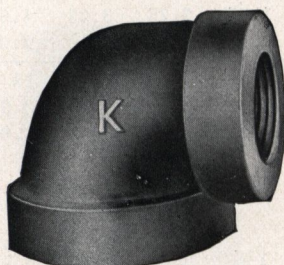


Fig. 296

Reducing Elbows

Size.....	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Price, Plain.....	.06	.07	.09	.12	.18	.23	.32	.60	.85
Price, Galvanized.....	.12	.14	.18	.24	.36	.46	.64	1.20	1.70

Size.....	3 1/2	4	4 1/2	5	6	7	8	9	10	12
Price, Plain.....	1.20	1.40	2.00	2.30	3.15	5.40	7.75	10.50	15.50	23.00
Price, Galvanized.	2.40	2.80	4.00	4.60	6.30	10.80	15.50	21.00	31.00	46.00

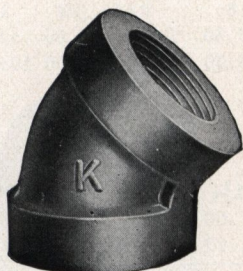


Fig. 298

45° Elbows

Size.....	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Price, Plain.....	.06	.07	.10	.12	.19	.24	.34	.60	.90
Price, Galvanized.....	.12	.14	.20	.24	.38	.48	.68	1.20	1.80

Size.....	3 1/2	4	4 1/2	5	6	7	8	9	10	12
Price, Plain.....	1.25	1.45	2.20	2.50	3.45	5.90	8.50	11.25	17.00	25.00
Price, Galvanized.....	2.50	2.90	4.40	5.00	6.90	11.80	17.00	22.50	34.00	50.00

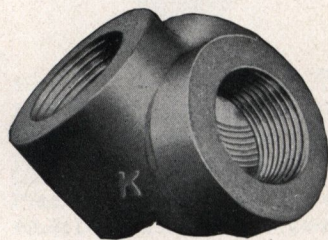


Fig. 299

Side Outlet Elbows

Size.....				1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Price, Plain.....				.18	.24	.30	.48	.60	.84	1.50	2.25
Price, Galvanized.....				.36	.48	.60	.96	1.20	1.68	3.00	4.50

Size.....	3 1/2	4	4 1/2	5	6	7	8	9	10	12
Price, Plain.....	3.15	3.60	5.25	6.00	8.25	14.00	20.00	26.00	40.00	60.00
Price, Galvanized.....	6.30	7.20	10.50	12.00	16.50	28.00	40.00	52.00	80.00	120.00

Cast Iron Fittings—"K" Standard

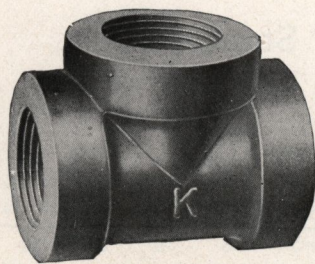


Fig. 302

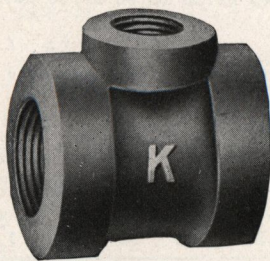


Fig. 303

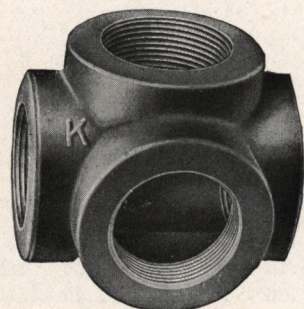


Fig. 304

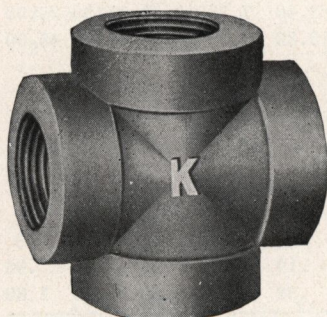


Fig. 305

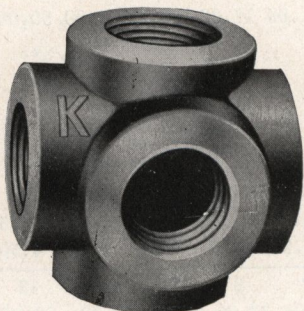


Fig. 306

Straight Tees

Size.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Price, Plain...	.08	.08	.09	.12	.15	.23	.29	.41	.73	1.10
Price, Galv'd..	.16	.16	.18	.24	.30	.46	.58	.82	1.46	2.20
Size.....	3 1/2	4	4 1/2	5	6	7	8	9	10	12
Price, Plain...	1.50	1.75	2.55	3.00	4.00	6.80	9.75	13.00	19.50	29.00
Price, Galv'd..	3.00	3.50	5.10	6.00	8.00	13.60	19.50	26.00	39.00	58.00

Reducing Tees

Size.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Price, Plain...	.09	.09	.10	.14	.17	.27	.33	.47	.83	1.25
Price, Galv'd..	.18	.18	.20	.28	.34	.54	.66	.94	1.66	2.50
Size.....	3 1/2	4	4 1/2	5	6	7	8	9	10	12
Price, Plain...	1.75	2.00	2.95	3.50	4.60	7.80	11.25	15.00	22.50	33.50
Price, Galv'd..	3.50	4.00	5.90	7.00	9.20	15.60	22.50	30.00	45.00	67.00

Side Outlet Tees

Size.....	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2
Price, Plain...	.27	.36	.45	.70	.90	1.25	2.25	3.25	4.50
Price, Galv'd..	.54	.72	.90	1.40	1.80	2.50	4.50	6.50	9.00
Size.....	4	4 1/2	5	6	7	8	9	10	12
Price, Plain...	5.25	7.65	9.00	12.00	20.00	30.00	40.00	50.00	90.00
Price, Galv'd..	10.50	15.30	18.00	24.00	40.00	60.00	80.00	100.00	180.00

Straight Crosses

Size.....	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Price, Plain...	.15	.16	.22	.27	.42	.53	.75	1.30	2.00
Price, Galv'd..	.30	.32	.44	.54	.84	1.06	1.50	2.60	4.00

Size.....	3 1/2	4	4 1/2	5	6	7	8	9	10	12
Price, Plain...	2.70	3.15	4.60	5.50	7.25	12.25	17.50	23.50	35.00	52.50
Price, Galv'd..	5.40	6.30	9.20	11.00	14.50	24.50	35.00	47.00	70.00	105.00

Reducing Crosses

Size.....	3⁄8	1⁄2	3⁄4	1	1¼	1½	2	2½	3
Price, Plain...	.18	.18	.25	.30	.46	.60	.83	1.45	2.20
Price, Galv'd..	.36	.36	.50	.60	.92	1.20	1.66	2.90	4.40

Size.....	3½	4	4½	5	6	7	8	9	10	12
Price, Plain...	3.00	3.50	5.10	6.00	8.00	13.50	19.25	26.00	38.50	58.00
Price, Galv'd..	6.00	7.00	10.20	12.00	16.00	27.00	38.50	52.00	77.00	116.00

Side Outlet Crosses

Size.....	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2
Price, Plain...	.36	.48	.60	.95	1.20	1.65	3.00	4.50	6.30
Price, Galv'd..	.72	.96	1.20	1.90	2.40	3.30	6.00	9.00	12.60
Size.....	4	4 1/2	5	6	7	8	9	10	12
Price, Plain...	7.20	10.50	12.00	16.50	28.00	40.00	52.00	80.00	120.00
Price, Galv'd..	14.40	21.00	24.00	33.00	56.00	80.00	104.00	160.00	240.00

Cast Iron Fittings—"K" Standard



Fig. 310

Straight Y-Bends

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Price, Plain	.20	.28	.34	.54	.66	.94	1.66	2.50
Price, Galvanized	.40	.56	.68	1.08	1.32	1.88	3.32	5.00

Size	3 1/2	4	4 1/2	5	6	7	8	10	12
Price, Plain	3.50	4.00	5.90	7.00	9.20	15.60	22.50	45.00	67.00
Price, Galvanized	7.00	8.00	11.80	14.00	18.40	31.20	45.00	90.00	134.00

Reducing Y-Bends

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2
Price, Plain	.23	.33	.40	.62	.76	1.08	1.90	2.90	4.00
Price, Galvanized	.46	.66	.80	1.24	1.52	2.16	3.80	5.80	8.00

Size	4	4 1/2	5	6	7	8	9	10	12
Price, Plain	4.60	6.80	8.00	10.60	18.00	26.00	....	....	....
Price, Galvanized	9.20	13.60	16.00	21.20	36.00	52.00	....	....	....

Reducing Couplings

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2
Price, Plain	.07	.10	.16	.22	.28	.43	.60	.80	1.00
Price, Galvanized	.14	.20	.32	.44	.56	.86	1.20	1.60	2.00

Size	4	4 1/2	5	6	7	8	9	10	12
Price, Plain	1.35	1.85	2.00	2.70	5.35	6.75	8.35	10.00	15.00
Price, Galvanized	2.70	3.70	4.00	5.40	10.70	13.50	16.70	20.00	30.00

Eccentric Reducing Couplings

Size	1 1/4	1 1/2	2	2 1/2	3	3 1/2
Price, Plain	.55	.72	1.00	1.50	2.40	3.00
Price, Galvanized	1.10	1.44	2.00	3.00	4.80	6.00

Size	4	4 1/2	5	6	7	8
Price, Plain	4.00	5.00	6.00	8.00	9.00	11.00
Price, Galvanized	8.00	10.00	12.00	16.00	18.00	22.00

Caps

Size	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Price, Plain	.03	.03	.03	.05	.08	.14	.20	.26	.40	.54
Price, Galvanized	.06	.06	.06	.10	.16	.28	.40	.52	.80	1.08

Size	3 1/2	4	4 1/2	5	6	7	8	9	10	12
Price, Plain	.75	.87	1.05	1.20	1.55	2.50	2.85	4.75	5.50	7.00
Price, Galvanized	1.50	1.74	2.10	2.40	3.10	5.00	5.70	9.50	11.00	14.00

Caps 2 inches and smaller are malleable iron.

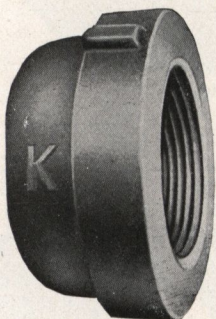


Fig. 314

Lock Nuts

Size	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Price, Plain	.04	.04	.06	.07	.08	.10	.12	.25	.27	.34
Price, Galvanized	.08	.08	.12	.14	.16	.20	.24	.50	.54	.68

Size	3 1/2	4	4 1/2	5	6	7	8	9	10	12
Price, Plain	.47	.64	.85	.90	1.30	1.70	2.35	2.70	3.00	4.00
Price, Galvanized	.94	1.28	1.70	1.80	2.60	3.40	4.70	5.40	6.00	8.00

Lock Nuts 2 1/2 inches and smaller are malleable iron.

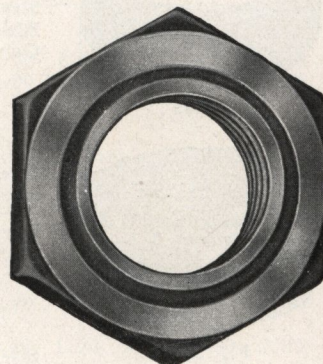


Fig. 315

Cast Iron Fittings

Cast Iron Plugs—Regular

Size.....	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2
Plain.....	.02	.02	.02	.02	.03	.04	.05	.07	.10	.18	.25	.38
Galvanized.....	.04	.04	.04	.04	.06	.08	.10	.14	.20	.36	.50	.76
Size.....	4	4 1/2	5	6	7	8	9	10	12	14	15	
Plain.....	.42	.65	.88	1.20	1.85	2.75	3.25	3.75	5.00	12.50	15.00	
Galvanized.....	.84	1.30	1.76	2.40	3.70	5.50	6.50	7.50	10.00	25.00	30.00	
Size.....							3/4	1	1 1/4	1 1/2	2	
Left-hand.....							.06	.08	.09	.11	.15	
Tapped for Air Cock.....							.12	.15	.20	.25	.30	

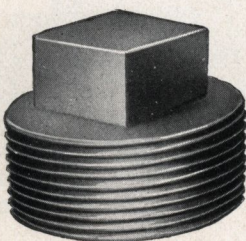


Fig. 321

Solid Plugs

Size.....	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2
Black.....	.04	.04	.04	.04	.06	.08	.09	.11	.15	.27	.38	.57
Galvanized.....	.08	.08	.08	.08	.12	.16	.18	.22	.30	.54	.76	1.14
Size.....	4	4 1/2	5	6	7	8	9	10	12	14	15	
Black.....	.63	1.00	1.35	1.80	2.80	4.15	5.00	5.75	7.50	18.75	22.50	
Galvanized.....	1.26	2.00	2.70	3.60	5.60	8.30	10.00	11.50	15.00	37.10	45.00	

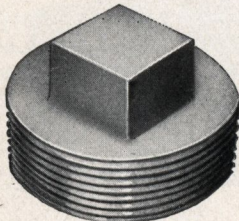


Fig. 322

Countersunk Plugs

Size.....		1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	
Black.....		.04	.06	.08	.09	.11	.15	.30	.40	.57	
Galvanized.....		.08	.12	.16	.18	.22	.30	.60	.80	1.14	
Size.....		4	4 1/2	5	6	7	8	9	10	12	
Black.....		.63	1.00	1.35	1.80	2.80	4.15	5.00	5.75	7.50	
Galvanized.....		1.26	2.00	2.70	3.60	5.60	8.30	10.00	11.50	15.00	

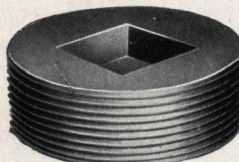


Fig. 323

Bushings

Size.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Black.....	.04	.04	.04	.05	.06	.07	.09	.14	.21	.30	.40	.50
Galvanized.....	.08	.08	.08	.10	.12	.14	.18	.28	.42	.60	.80	1.00
Size.....		4 1/2	5	6	7	8	9	10	12	14	15	16
Black.....		.75	.93	1.25	1.87	2.75	3.25	3.75	5.00	12.50	15.00	22.00
Galvanized.....		1.50	1.86	2.50	3.74	5.50	6.50	7.50	10.00	25.00	30.00	44.00

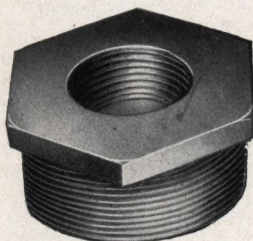


Fig. 324

Faced Bushings

Size.....	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Black.....	.08	.09	.11	.13	.17	.22	.32	.48	.70	1.20	1.50
Galvanized.....	.12	.14	.17	.20	.25	.33	.48	.72	1.05	1.80	2.25
Size.....		4 1/2	5	6	7	8	9	10	12	14	15
Black.....		2.10	2.60	3.75	5.60	8.25	9.75	11.25	15.00	37.50	45.00
Galvanized.....		3.15	3.90	5.63	8.40	12.37	14.62	16.87	22.50	56.25	67.50

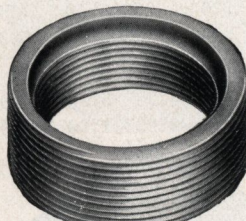


Fig. 325

Radiator Bushings

Size.....		1x3/4	1 1/4x1	1 1/2x1 1/2	1 1/2x3/4	1 1/2x1
Each.....		.09	.11	.14	.14	.14
Size.....		1 1/2x1 1/4	2x3/4	2x1	2x1 1/4	2x1 1/2
Each.....		.14	.21	.21	.21	.21

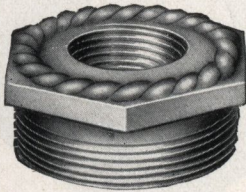


Fig. 326
Radiator Bushing

Radiator Plugs

Size.....		1 1/4	1 1/2	2
Each.....		.15	.18	.25

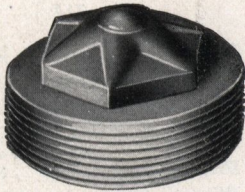


Fig. 327
Radiator Plug

Cast Iron Fittings—"K" Standard

Close Pattern Return Bends

Size.....	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Centers.....	1 1/4	1 1/2	1 3/4	2 1/4	2 1/2	3 1/4	3 1/2	4 1/4
Price, R. H. Plain.....	.18	.20	.22	.28	.40	.57	1.20	1.70
Price, R. H. Galvanized..	.36	.40	.44	.56	.80	1.14	2.40	3.40
Price, R. and L. or L. H., Plain.....	.21	.23	.26	.33	.46	.66	1.40	1.95
Price, R. and L. or L. H., Galvanized.....	.42	.46	.52	.66	.92	1.32	2.80	3.90



Fig. 332

Pitched Close Pattern Return Bends

Size.....	1/2	3/4	1	1 1/4	1 1/2	2
Centers.....	1 1/4	1 1/2	1 3/4	2 1/4	2 1/2	3 1/4
Price, R. H., Plain.....	.21	.23	.26	.33	.46	.66
Price, R. and L. or L. H., Plain.....	.21	.23	.26	.33	.46	.66



Fig. 333

In ordering Pitched Return Bends, always state the length of pipes in coils.

Close Pattern Return Bends with Back Outlet

Size.....	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Centers.....	1 1/2	1 3/4	2 1/4	2 1/2	3 1/4	3 1/2	4 1/4
Price, Plain.....	.38	.42	.60	.80	1.15	2.00	3.00
Price, Galvanized.....	.76	.84	1.20	1.60	2.30	4.00	6.00
Price, R. and L., Plain.....	.42	.48	.70	.95	1.30	2.30	3.50
Price, R. and L., Galvanized....	.84	.96	1.40	1.90	2.60	4.60	7.00

The back outlet of R. and L. Bends is always tapped right hand.

Open Pattern Return Bends

Size.....	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Centers.....	1 1/2	1 7/8	2 1/2	3	3 1/2	4 1/2	5 1/2	6 1/2
Price, Plain.....	.25	.26	.30	.40	.55	.80	1.35	2.20
Price, Galvanized.....	.50	.52	.60	.80	1.10	1.60	2.70	4.40
Price, R. and L. or L. H., Plain.....	.30	.30	.35	.46	.64	.92	1.55	2.50
Price, R. and L. or L. H., Galvanized	.60	.60	.70	.92	1.28	1.84	3.10	5.00

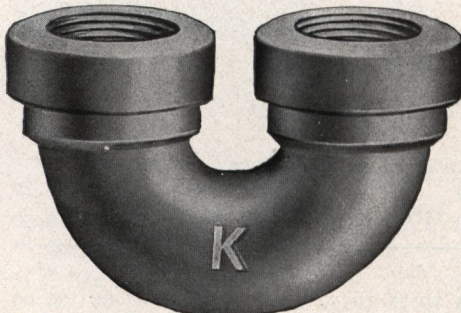


Fig. 334

Special Wide Pattern Return Bends

Size.....	1	1	1	1	1	1 1/4	1 1/4	1 1/4
Centers.....	4	5	6	8	9	4	6	7
Black, each.....	.50	.60	.75	1.50	1.25	1.00	1.25	1.40
Galvanized, each..	.90	1.10	1.30	2.50	1.85	1.75	2.00	2.25
Size.....	1 1/4	1 1/4	1 1/2	1 1/2	2	2	2	2
Centers.....	8	9	6	8	4	4 3/4	5	6
Black, each.....	2.50	2.00	1.60	2.00	.80	1.75	1.90	2.00
Galvanized, each..	4.00	3.25	2.60	3.25	1.60	3.00	3.15	3.25
Size.....	2	2	2 1/2	3	3 1/2	4	4	4
Centers.....	8	12	8	10	5	6	11	
Black, each.....	3.50	4.50	5.50	6.00	5.50	6.25	7.50	
Galvanized, each.....	5.00	7.00	9.00	10.00	9.00	9.75	11.00	



Fig. 335

Open Pattern Return Bends with Back Outlet

Size.....	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Centers.....	1 7/8	2 1/2	3	3 1/2	4 1/2	5 1/2	6 1/2
Price, Plain.....	.38	.42	.60	.80	1.15	2.00	3.00
Price, Galvanized.....	.76	.84	1.20	1.60	1.30	4.00	6.00
Price, R. and L. or L. H., Plain.....	.42	.48	.70	.95	1.30	2.30	3.50
Price, R. and L. or L. H., Galvanized.....	.84	.96	1.40	1.90	2.60	4.60	7.00

The back outlet of R. and L. Bends is always tapped right-hand.

Cast Iron Fittings—"K" Standard



Fig. 342

Long-Turn Elbows

Size.....	1	1¼	1½	2	2½	3	3½	4
Price, Plain.....	.32	.40	.55	.80	1.20	2.25	3.25	3.50
Price, Galvanized.....	.64	.80	1.10	1.60	2.40	4.50	6.50	7.00

Size.....	4½	5	6	7	8	9	10	12
Price, Plain.....	5.50	6.50	8.75	13.00	17.00	25.50	30.00	40.00
Price, Galvanized.....	11.00	13.00	17.50	26.00	34.00	51.00	60.00	80.00

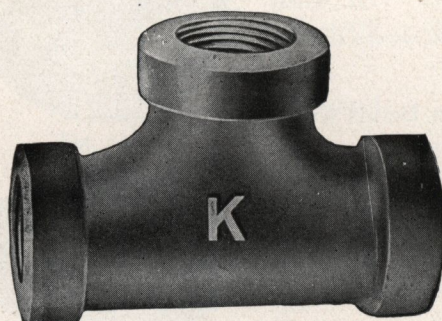


Fig. 343

Long-Turn Tees, Double Sweep

Size.....	1	1¼	1½	2	2½	3	3½	4
Price, Plain.....	.64	.80	1.10	1.60	2.40	4.50	6.50	7.00
Price, Galvanized.....	1.28	1.60	2.20	3.20	4.80	9.00	13.00	14.00

Size.....	4½	5	6	7	8	9	10	12
Price, Plain.....	11.00	13.00	17.50	26.00	34.00	51.00	60.00	80.00
Price, Galvanized.....	22.00	26.00	35.00	52.00	68.00	102.00	120.00	160.00

For price of Reducing Long-Turn Fittings, add 50 per cent. to above list.



Fig. 344

Long-Turn Tees, Single Sweep

Size.....	1	1¼	1½	2	2½	3	3½	4
Price, Plain.....	.48	.60	.82	1.20	1.80	3.40	4.90	5.25
Price, Galvanized.....	.96	1.20	1.64	2.40	3.60	6.80	9.80	10.50

Size.....	4½	5	6	7	8	9	10	12
Price, Plain.....	8.25	9.75	13.25	19.50	25.50	38.00	45.00	60.00
Price, Galvanized.....	16.50	19.50	26.50	39.00	51.00	76.00	90.00	120.00



Fig. 345

Long-Turn Crosses

Size.....	1	1¼	1½	2	2½	3	3½	4
Price, Plain.....	.85	1.10	1.50	2.15	3.20	6.00	8.75	9.50
Price, Galvanized.....	1.70	2.20	3.00	4.30	6.40	12.00	17.50	19.00

Size.....	4½	5	6	7	8	9	10	12
Price, Plain.....	15.00	17.50	24.00	35.00	45.00	68.00	80.00	107.00
Price, Galvanized.....	30.00	35.00	48.00	70.00	90.00	136.00	160.00	214.00

Cast Iron Fittings—"K" Standard



Fig. 351
Pitched Elbow

Pitched Elbows

Tapped to Pitch $\frac{1}{4}$ inch in 1 foot

Size	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Straight	.08	.10	.13	.20	.25	.35	.65
Reducing		.10	.13	.20	.25	.35	.65

Size	3	$3\frac{1}{4}$	4	$4\frac{1}{2}$	5	6
Straight	1.00	1.30	1.50	2.25	3.00	4.00
Reducing	1.00	1.30	1.50	2.25	3.00	...

Right and Left Pitched Elbows will be charged at 5 per cent. gross discount higher than Pitched Elbows.

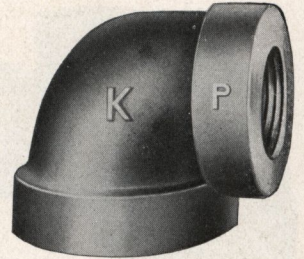


Fig. 352
Reducing Pitched Elbow

Cast Iron Couplings Standard and Extra Heavy

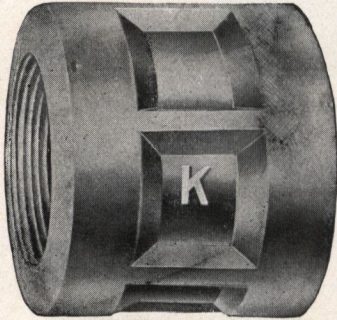


Fig. 353

Standard Couplings

Size	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Right Hand	.15	.20	.25	.30	.50
Right and Left	.15	.20	.25	.30	.50

Extra Heavy Cast Iron Couplings

Size	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Right Hand	.15	.20	.25	.30	.45	.55	.80	1.10
Right and Left	.20	.25	.35	.40	.55	.65	.90	1.25

Reducing Twin Elbows

For Hot Water

Size	Each
$\frac{3}{4}$ x $\frac{3}{4}$ x 1	.38
1 x 1 x $1\frac{1}{4}$	.52
$1\frac{1}{4}$ x $1\frac{1}{4}$ x $1\frac{1}{2}$	.68
$1\frac{1}{2}$ x $1\frac{1}{2}$ x 2	.90
2 x 2 x $2\frac{1}{2}$	1.50

Size	Each
$2\frac{1}{2}$ x $2\frac{1}{2}$ x 3	2.25
3 x 3 x 4	3.75
$3\frac{1}{2}$ x $3\frac{1}{2}$ x 5	6.75
4 x 4 x 5	6.75
5 x 5 x 6	9.75

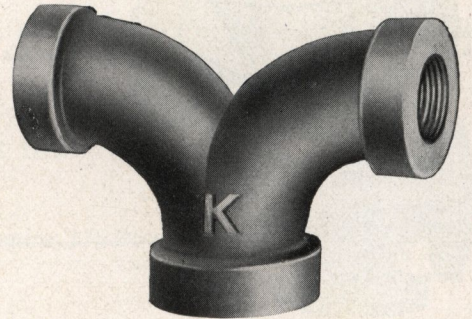


Fig. 354. Twin Elbow

Eccentric Fittings

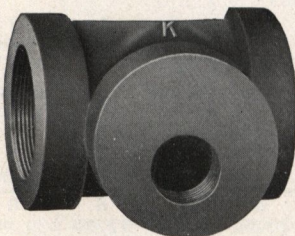


Fig. 355. Eccentric Tee

To order only. Sketch must accompany order showing permanent position. The object of these fittings is to prevent lodging place for water.

Prices on application.



Fig. 356. Eccentric Tee

Extra Heavy Cast Iron "K" Fittings



Fig. 361. Elbow

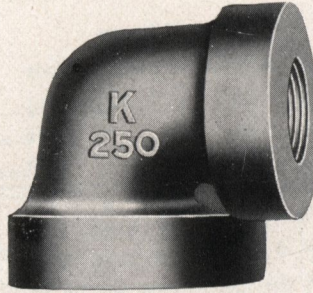


Fig. 362. Elbow Reducing



Fig. 363. Elbow, 45°

Extra Heavy Straight Elbows

Size, inches	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Straight Elbows, each	.25	.30	.35	.45	.60	.75	1.25	2.00
Size, inches	3 1/2	4	4 1/2	5	6	7	8	10
Straight Elbows, each	2.75	3.50	4.25	5.50	8.00	12.00	17.00	28.00

Extra Heavy Reducing Elbows

Size, inches	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Reducing Elbows, each	.35	.40	.45	.55	.75	.95	1.55	2.50
Size, inches	3 1/2	4	4 1/2	5	6	7	8	10
Reducing Elbows, each	3.40	4.40	5.30	6.80	10.00	15.00	21.00	35.00

Extra Heavy 45° Elbows

Size, inches	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Elbows 45°, each	.35	.40	.45	.55	.70	.90	1.50	2.50
Size, inches	3 1/2	4	4 1/2	5	6	7	8	10
Elbows 45°, each	3.50	4.50	5.50	6.75	9.75	14.50	21.00	34.00

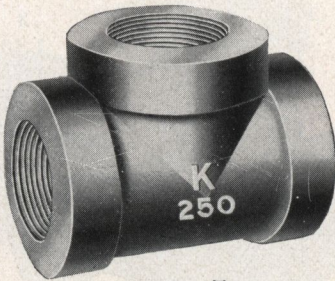


Fig. 364. Tee

Extra Heavy Tees

Size, inches	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Straight Tees, each	.40	.45	.55	.70	.90	1.15	1.80	3.00
Size, inches	3 1/2	4	4 1/2	5	6	7	8	10
Straight Tees, each	4.25	5.50	6.75	8.25	12.00	18.00	25.00	42.00

Extra Heavy Tees

Size, inches	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Reducing Tees, each	.55	.65	.70	.90	1.15	1.40	2.25	3.75
Size, inches	3 1/2	4	4 1/2	5	6	7	8	10
Reducing Tees, each	5.30	6.85	8.50	10.25	15.00	22.50	31.00	52.00

Extra Heavy Reducing Tees

Size, inches	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Reducing Tees, each	.55	.65	.70	.90	1.15	1.40	2.25	3.75
Size, inches	3 1/2	4	4 1/2	5	6	7	8	10
Reducing Tees, each	5.30	6.85	8.50	10.25	15.00	22.50	31.00	52.00

Extra Heavy Crosses

Size, inches	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Each	.60	.65	.70	.90	1.20	1.50	2.50	4.00
Size, inches	3 1/2	4	4 1/2	5	6	7	8	10
Each	5.50	7.00	8.50	11.00	16.00	24.00	34.00	56.00

Extra Heavy Reducing Crosses

Size, inches	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Each	.80	.85	.90	1.15	1.50	1.85	3.15	5.00
Size, inches	3 1/2	4	4 1/2	5	6	7	8	10
Each	6.85	8.75	10.00	13.75	20.00	30.00	42.00	70.00

Galvanized Extra Heavy Fittings double above list.

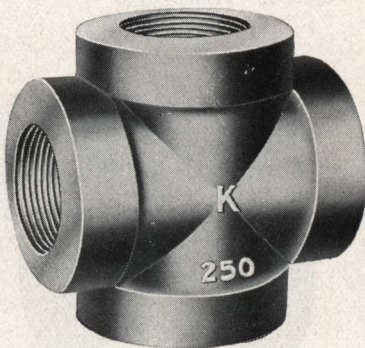


Fig. 366. Cross

Extra Heavy Malleable Iron Fittings

For 250 Pounds Working Steam Pressure

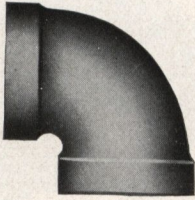


Fig. 371. Elbow

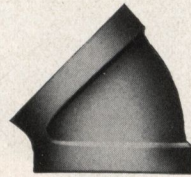


Fig. 372. 45° Elbow

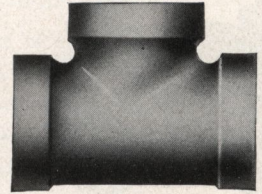


Fig. 373. Tee

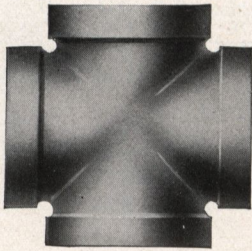


Fig. 374. Cross

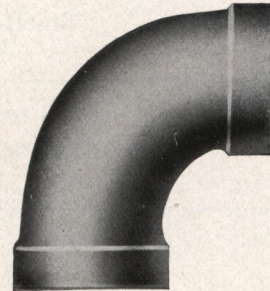


Fig. 375. Long Sweep Elbow

Extra Heavy Malleable Fittings

Size, inches	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
Elbows, each	.30	.35	.40	.55	.70	.90	1.50	2.40	3.25	4.25	6.50	9.50
45° Elbows, each	.35	.42	.50	.65	.85	1.10	1.85	2.85	4.00	5.00	7.50	10.50
Long Sweep Elbows, each	.....	.....	.64	.80	1.10	1.60	2.40	4.50	6.50	7.00	13.00	17.50
Tees, each	.45	.50	.60	.80	1.05	1.35	2.25	3.60	5.00	6.50	9.75	14.25
Crosses, each	.90	1.00	1.20	1.60	2.10	2.70	4.50	7.20	10.00	13.00	19.50	28.50

List of Sizes, Flat Band Fire Line Fittings—High Pressure

Elbows, 90°, inches..... 2 1/2, 3, 3 x 2, 4, 4 x 1 1/2, 4 x 2, 6.

Elbows, 45°, inches..... 2 1/2, 3, 4, 5, 6.

Tees, inches..... 2 1/2, 2 1/2 x 2, 3, 3 x 1 1/2, 3 x 2, 2 1/2 x 1 1/2, 3 x 2 x 2, 3 x 2 x 3, 3 x 2 1/2 x 2 1/2, 3 x 2 1/2 x 3.

3 x 3 x 2 1/2, 4, 1 1/2 x 4, 4 x 1 1/2, 4 x 2, 4 x 2 1/2, 4 x 3, 5 x 2 1/2, 5 x 4, 5, 6, 6 x 2 1/2, 6 x 4.

Couplings, inches..... 4-inch Plain. 6-inch Band.

Prices quoted on application.

Long Sweep Fittings for
Sprinkler Work

Steam Pressure, 125 Pounds Water Pressure, 175 Pounds

Cast Iron

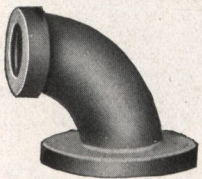


Fig. 376. Elbow

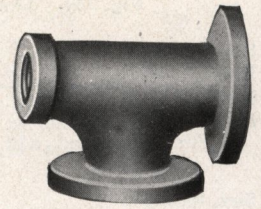


Fig. 377. Tee

Sprinkler Fittings

Size Inches	Elbow Flanged One End Each	Elbow Both Ends Each	Tees Flanged One or Two Ends Each	Tees Flanged Three Ends Each	Cross Flanged One or Two Ends, Each	Cross Flanged Three or Four Ends, Each
2	5.00	6.00	8.00	9.00	11.00	12.00
2 1/2	5.50	6.75	9.00	10.00	12.50	13.50
3	6.00	7.50	10.00	11.50	13.50	15.00
3 1/2	6.50	8.50	11.00	13.00	15.00	17.00
4	7.50	10.00	12.00	15.00	17.00	20.00
5	10.00	12.50	15.00	18.00	22.00	25.00
6	14.00	17.50	22.00	26.00	30.00	35.00
7	25.00	30.00	40.00	45.00	55.00	60.00
8	30.00	35.00	45.00	50.00	65.00	70.00
10	40.00	50.00	80.00	90.00	100.00	120.00
12	53.00	65.00	105.00	120.00	132.00	157.00

Prices are for fittings faced and drilled American Standard. In ordering, send sketch showing size openings and position of flanges.

Cast and Malleable Flange Unions

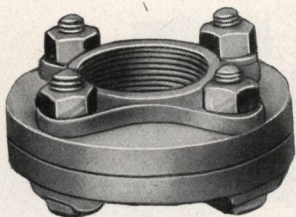


Fig. 381. Standard Cast Iron Flange Union

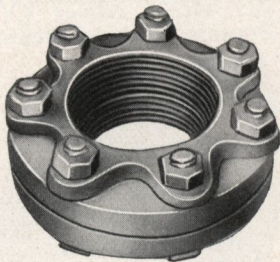


Fig. 382. Extra Heavy Cast Iron Flange Union

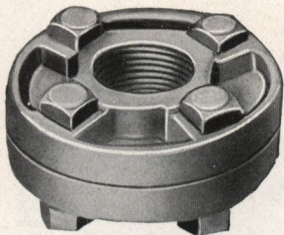


Fig. 383. Malleable Iron Flange Union

Standard Cast Iron Flange Unions											
Size, inches	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2
Standard, each	.40	.46	.52	.64	.78	1.00	1.25	1.50	1.80	2.10	2.70
Size, inches	5	6	7	8	9	10	12	14	15	16	
Standard, each	3.15	3.95	5.50	7.00	10.00	11.50	16.00	28.00	35.00	60.00	
Extra Heavy Cast Iron Flange Unions											
Size, inches	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2
Extra Heavy, each	.60	.70	.80	1.00	1.15	1.50	1.90	2.25	2.70		
Size, inches	4	4 1/2	5	6	7	8	9	10	12		
Extra Heavy, each	3.15	4.00	4.75	6.00	8.25	10.50	15.00	17.25	24.00		
Malleable Flange Unions											
For 125 Pounds Working Pressure.											
Size, inches	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5
Each	1.40	1.60	2.00	2.50	3.00	3.50	4.40	5.25	6.00	7.00	8.00
Galvanized Flange Unions, double above lists.											

Dart and Jefferson Flange Unions

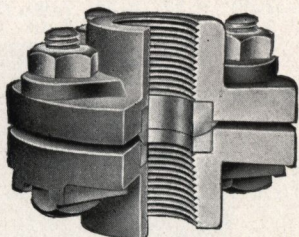


Fig. 384. Dart Flange Union

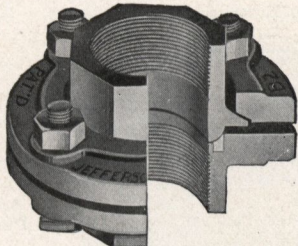


Fig. 385. Jefferson Flange Union

Dart Flange Unions											
Size, inches	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2
Black, each	.55	.60	.80	1.20	1.60	2.00	3.20	4.80	6.00		
Size, inches	4	4 1/2	5	6	7	8	9	10	12		
Black, each	7.50	8.75	10.00	12.50	15.00	18.00	21.60	28.80	46.00		
For Galvanized, add 50 per cent.; Malleable Flange Unions, 20 per cent. advance.											
Jefferson Flange Unions											
Size, inches	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2
Black, each	.55	.60	.80	1.20	1.60	2.00	3.20	4.80	6.00		
Galvanized, each	.75	.80	1.10	1.60	2.15	2.70	4.30	6.50	8.10		
Size, inches	4	4 1/2	5	6	7	8	9	10	12		
Black, each	7.50	8.75	10.00	12.50	15.00	18.00	21.60	28.80	46.00		
Galvanized, each	10.15	11.80	13.50	16.90	20.25	24.30	29.15	38.90	62.00		

Jefferson Three-part Unions are malleable iron with bronze seat, and are adapted for all pressures to 200 pounds. Makes a tight joint, either in or out of alignment. The trouble experienced in aligning the holes in the ordinary flange union is overcome by the movable collar in the Jefferson—saving time and labor and eliminating the possibility of breaking the flanges or the pipe.

Malleable Flanges



Fig. 386. Malleable Flange

Size	3/4	1	1	1 1/4	1 1/2
Diameter of Flange	3 1/2	4	6	4 1/2	5
Price, Black, each	.15	.16	.25	.25	.30
Price, Galvanized, each	.30	.32	.50	.50	.60
Size	2	2 1/2	3	3 1/2	4
Diameter of Flange	6	7	7 1/2	8	9
Price, Black, each	.42	.62	.75	.90	1.15
Price, Galvanized, each	.84	1.24	1.50	1.80	2.30

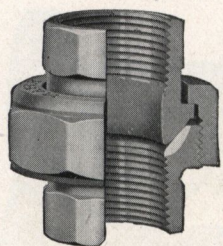


Fig. 391. Mark Union

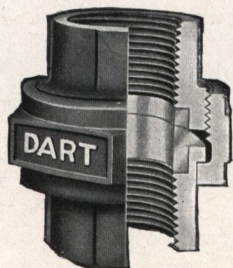


Fig. 392. Dart Union

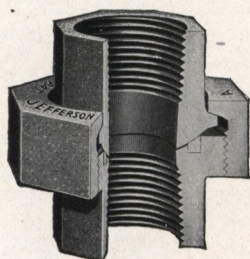
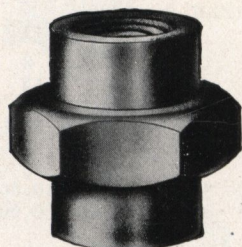
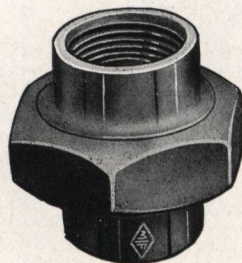


Fig. 393. Jefferson Union

Fig. 394
Brass Ground JointFig. 395
Standard Malleable Union

Unions

Mark Cold Drawn Steel Unions

The seat of the Mark Union is the ideal combination of hardened steel to soft brass, ground to a ball joint. The brass seat ring is fused with the steel and is made an integral part of the union, the adhesion of the brass and steel being so complete that no amount of distortion or strain can separate them without breaking one or the other. There can be no leak under the seat ring. Not affected by expansion and contraction. Coated inside and out with a lead and zinc alloy—rust proof.

Size.....	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Each.....	.30	.30	.40	.50	.60	.80	1.20	1.60	2.00	3.20	4.80

For working steam pressures to 250 pounds.

Dart Patent Union

Malleable Iron, Bronze Seats, Ground Joints

Size, inches.....	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Price, Plain.....	.30	.30	.40	.50	.60	.80	1.20	1.60	2.00	3.20	4.80	7.20	10.80
Price, Galvanized..	.45	.45	.60	.75	.90	1.20	1.80	2.40	3.00	4.80	7.20	10.80	16.20

Jefferson Union—Style "A"

Heavy Construction, Malleable Pipe Ends, Brass-to-iron Joint

Size, inches.....	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Female, Black.....	.30	.30	.40	.50	.60	.80	1.20	1.60	2.00	3.20	4.80	8.00	10.00
Female, Galvanized.....	.45	.45	.60	.75	.90	1.20	1.80	2.40	3.00	4.80	7.20	12.00	15.00
Male and Female, Black....	...	.46	.50	.63	.74	.95	1.30	1.70	2.60	3.80	5.40	...	...
Male and Female, Galvanized	...	.51	.56	.71	.87	1.10	1.60	2.00	3.20	4.80	6.80	...	...
Male, Black.....	...	.50	.54	.69	.82	1.10	1.50	1.80	2.90	4.40	...	...	...
Male, Galvanized.....	...	.55	.60	.78	.96	1.30	1.80	2.20	3.60	5.50	...	...	...

Recommended for working pressures up to 250 pounds.

Brass Unions, Ground Joint

Size, inches.....	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Rough, each.....	.40	.50	.65	.85	1.15	1.60	2.25	2.70	4.00	7.50	11.50	...	...
Semi-Finished, each.....	.45	.55	.75	.95	1.30	1.75	2.50	3.00	4.50	8.25	12.75	22.50	30.00
Finished, each.....	.50	.60	.85	1.05	1.40	1.90	2.75	3.25	5.00	9.00	14.00	25.00	33.00
Finished and Nickel-pl'd, each	.60	.72	1.02	1.26	1.68	2.28	3.30	3.90	6.00	10.80	16.80	30.00	39.60
Rough Tinned, each.....	.45	.50	.78	1.10	1.55	2.12	3.00	4.00	5.28	8.40	10.85	...	...

Malleable Unions

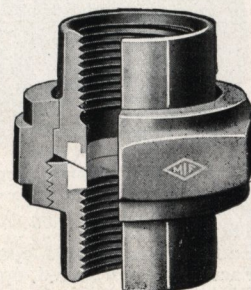
Fig. 395

Size, inches ..	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Black, each..	.18	.18	.20	.22	.27	.33	.46	.58	.75	1.55	2.10	3.65	4.35
Galv'd, each.	.27	.27	.30	.33	.40	.50	.70	.90	1.15	2.35	3.15	5.50	6.50

Malleable Unions

Brass Seat. Fig. 396

Size, inches.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Black, each.....	.30	.40	.50	.60	.80	1.20	1.60	2.00	3.20	4.80
Galvanized, each..	.45	.60	.75	.90	1.20	1.80	2.40	3.00	4.80	7.20

Fig. 396. Malleable
Brass Seat Union

Expansion Joints

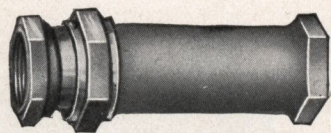


Fig. 402. Brass Screwed Expansion Joint

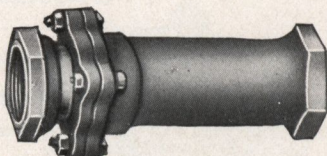


Fig. 404. Iron Body Screwed Expansion Joint

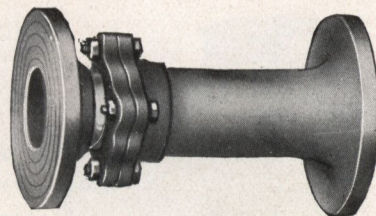


Fig. 406. Iron Body Flanged Expansion Joint

Brass Expansion Joints—Screwed

Standard and Special Traverse

Size, inches.....	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Traverse, inches.....	2	2 1/4	2 1/4	2 1/4	2 1/4	2 1/2	2 1/2	2 3/4
End to End, opened, inches.....	5 7/8	6 3/8	6 5/8	6 7/8	7 1/8	7 3/4	7 7/8	8 3/4
Each Standard Traverse.....	1.50	2.20	2.75	4.00	5.00	8.00	17.50	24.00
Special Traverse, inches.....		2 1/2	3	3 1/2	4	5	6	7
End to End, opened, inches.....		7 5/8	8 3/4	10 1/4	11 1/2	13 3/4	16 3/8	18 5/8
Each, Special Traverse.....		2.25	5.20	6.20	7.40	12.50	24.00	30.00

Iron Body Expansion Joints, Screwed, Brass Sleeve

Standard Traverse—125 Pounds Steam Pressure

Size, inches.....	2	2 1/2	3	3 1/2	4	5	6	7	8	10	12
Length Traverse, inches.....	2 1/2	2 1/2	2 3/4	3	3 1/4	4	5	6	7	7	8
End to End, opened, inches.....	11 11/16	12 1/4	13 5/16	14 1/4	15 1/4	17 1/4	20 1/8	23 1/4	26 1/16	28	31 1/2
Each.....	7.00	8.00	10.00	14.00	18.00	38.00	45.00	70.00	100.00	160.00	225.00

Iron Body Expansion Joint, Flanged, Brass Sleeve

Standard Traverse—125 Pounds Steam Pressure

Size, inches.....	2	2 1/2	3	3 1/2	4	5	6	7	8	10	12
Length of Traverse, inches.....	2 1/2	2 1/2	2 3/4	3	3 1/4	4	5	6	7	7	8
Face to Face, opened, inches.....	11 3/8	11 11/16	12 1/16	13 1/16	14 3/4	16 5/8	19 1/2				
Diameter of Flanges, inches.....	6	7	7	8 1/2	9	10	11				
Each.....	15.00	16.00	18.50	25.00	30.00	48.00	55.00				
Size, inches.....	7	8	10	12	14	15	16				
Length of Traverse, inches.....	6	7	7	8	10	10	10				
Face to Face, opened, inches.....	22 9/16	25 5/16	26 1/4	30 5/8	37 7/8	38 5/8	39 3/4				
Diameter of Flanges, inches.....	12 1/2	13 1/2	16	19	21	22 1/4	23 1/2				
Each.....	80.00	110.00	175.00	250.00	500.00	550.00	600.00				

Iron Body Expansion Joints—Special Traverse

Screwed and Flanged for 125 Pounds Steam Pressure

Size, inches.....	2	2 1/2	3	3 1/2	4	5	6	7	8
Length Traverse, Screwed, inches.....	5	6	7	8	9	10	11	12	12
Length Traverse, Flanged.....		6	7	8	9	10	11	12	12
End to End, opened, Screwed, inches.....	14 5/16	15 3/4	17 9/16	19 1/4	21	23 1/4	26 1/8	29 1/4	31 1/16
End to End, opened, Flanged, inches.....		15 3/16	16 15/16	18 13/16	20 1/2	22 5/8	25 1/2	28 9/16	30 5/16
Diameter Flanges, inches.....		7	7 1/2	8 1/2	9	10	11	12 1/2	13 1/2
Each, Screwed.....	13.00	15.50	21.00	25.00	31.00	45.00	55.00	80.00	110.00
Each, Flanged.....		22.00	29.00	35.00	44.00	63.00	80.00	110.00	150.00

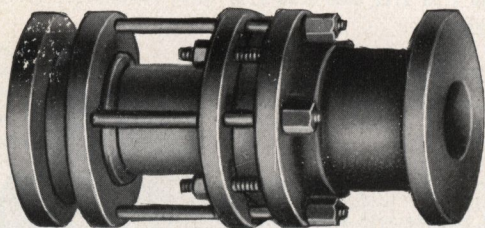


Fig. 408. Extra Heavy Expansion Joint

Extra Heavy Expansion Joints

Iron Body, with Tie Rods and Brass Sleeve for 250 Pounds

Steam Pressure—Screwed and Flanged

Size, inches.....	2	2 1/2	3	3 1/2	4	5	6
Traverse, inches.....	2 1/2	2 1/2	2 3/4	3	3 1/4	4	5
E. to E. Scd., op'd.....	15 1/8	15 13/16	16 7/8	18	18 7/8	21 5/8	24 7/8
F. to F. Flgd., op'd.....	15 1/2	16	17 5/8	18 1/16	19 1/2	22 3/8	25 3/4
Diam. Flanges.....	6 1/2	7 1/2	8 1/4	9	10	11	12 1/2
Screwed, each.....	30.00	40.00	50.00	60.00	70.00	80.00	100.00
Flanged, each.....	35.00	45.00	55.00	65.00	75.00	85.00	105.00

Size, inches.....	7	8	9	10	12	14	15	16	18
Traverse, inches.....	6	7	7	7	8	10	10	10	10
End to End, Screwed, opened, inches.....	27 7/8	30 3/4	31 3/4	32 3/4	36 15/16				
Face to Face, Flanged, opened, inches.....	28 1/2	31 1/2	31 5/8	33 5/8	37 11/16	43	43 1/8	45	46 1/8
Diameter Flange, inches.....	14	15	16	17 1/2	20	22 1/2	23 1/2	25	27
Screwed, each.....	120.00	145.00	190.00	240.00	290.00				
Flanged, each.....	125.00	150.00	200.00	250.00	300.00	500.00	500.00	750.00	1000.00

Badger Self-Equalizing Expansion Joint

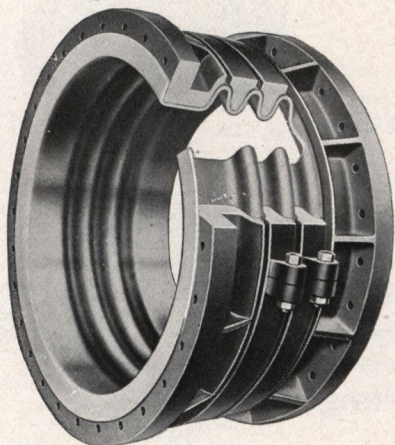


Fig. 412

Badger Self-Equalizing Expansion Joint in part section showing deep corrugations, and shape and location of Equalizing Rings.

The Badger is a one-piece joint. It is a corrugated copper joint made with equalizing rings for distributing the expansion equally on all the corrugations. The joint is corrugated because when properly designed and rolled, corrugations combine the elasticity to stand repeated changes of shape with strength to resist pressure.

The Badger Joint has external equalizing rings of cast iron or steel which strengthen the joint and distribute the expansion equally among all the corrugations.

These joints are necessarily made to order, and the following information should be given for orders or estimates:

Size of pipe; whether steam, water, gas or air line; working pressure; amount of expansion required, or length and material of pipe; face to face dimensions; approximate range of temperature; how often heat is turned on or off; whether subject to superheat; all flange dimensions.

The following table indicates the amount of pipe that can be safely cared for by Badger Joints:

Steam Pressure, pounds.....	5	15	25	50	80	125	150
Cast Iron Pipe, feet.....	140	130	120	110	100	90	85
Steel Pipe, feet.....	120	110	100	90	85	75	70

Based on Standard Joint, which has four deep corrugations and which is good for 2-inch expansion; also made as follows:
Two-Corrugation Joints for 1-inch expansion; three-Corrugation Joints for 1½-inch expansion.
Prices quoted on specification details as above.

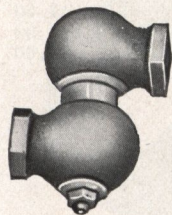


Fig. 413

Steam Swing Joint

Brass Steam Swing Joints

Steam Swing Joints

Size.....	¼	⅜	½	¾	1	1¼	1½	2	2½
Each.....	1.00	1.25	1.75	2.40	3.50	4.50	6.25	9.00	22.00

Universal Swing Joints

Size.....	¼	⅜	½	¾	1	1¼	1½	2	2½
Each.....	2.00	2.50	3.50	4.80	7.00	9.00	12.50	18.00	44.00

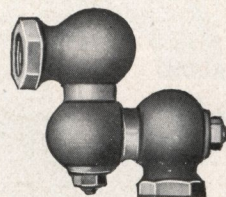


Fig. 414

Universal Swing Joint

Flexible Joints

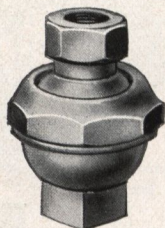


Fig. 415. No. 1

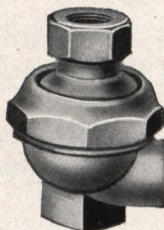


Fig. 416. No. 2



Fig. 417. No. 3

Size, inches.....	⅛	¼	⅜	½	¾	1	1¼	1½	2	2½
No. 1 and No. 3, each.....	2.75	3.00	3.00	3.25	3.75	4.25	5.25	6.00	7.50	9.00
No. 2, each.....	3.00	3.25	3.25	3.50	4.00	4.50	5.50	6.25	8.75	10.50
Size, inches.....	3	3½	4	4½	5	6	7	8	9	10
No. 1 and No. 3, each.....	11.25	14.00	15.00	18.75	18.75	25.00	50.00	55.00	90.00	100.00
No. 2, each.....	12.25	15.50	16.75	20.75	20.75	27.50	55.00	65.00	100.00	120.00

No. 1 and No. 2 for steam, air or gas up to 200 pounds.

No. 3, Special Liquid Joint, all sizes to 48-inch.

Special Joints, ½ to 2-inch, inclusive, for pressures to 1000 pounds, quoted on application.

Special Flanges

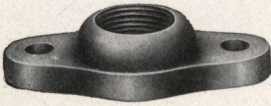


Fig. 420. Oval Flange

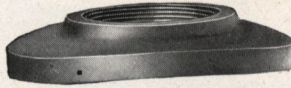


Fig. 421. Curved Cast Iron Flange. Made to fit any size circle
Prices on application

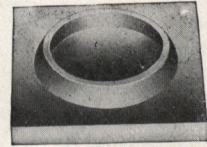


Fig. 422. Post Flange

Oval Cast Iron Flanges												
Size.....	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5
Each.....	.14	.18	.22	.24	.31	.44	.50	.65	.75	.90	1.40	1.70
Post Flanges												
Size Pipe, inches.....	2	2 1/2	3	3 1/2	4	5	6					
Size Square, inches.....	5x5	6x6	8x8	8x8	8x8	10x10	10x10					
Thickness, inches.....	1 1/8	5/8	5/8	1 1/8	1 1/8	3/4	1 1/8					
Each.....	1.00	1.25	1.85	1.85	1.85	2.90	2.90					

Sizes not listed will be furnished at special prices

Forged Steel Saddle or Boiler Flanges

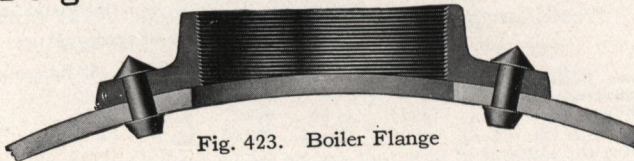


Fig. 423. Boiler Flange

Size of Pipe Inches	Diameter of Flange Inches	Thickness of Flange Inch	Depth of Flange Inches	Price, Bent or Flat not Threaded	Price, Bent or Flat and Threaded	Size of Pipe Inches	Diameter of Flange Inches	Thickness of Flange Inch	Depth of Flange Inches	Price, Bent or Flat not Threaded	Price Bent or Flat and Threaded
3/4	6	5/16	1	2.28	2.40	4	10	7/16	2	3.35	3.50
1	6	5/16	1	2.28	2.40	4 1/2	10 1/2	1/2	2	4.00	4.20
1 1/4	6 1/2	5/16	1 1/4	2.28	2.40	5	11 1/2	1/2	2	4.75	5.00
1 1/2	7	3/8	1 1/2	2.28	2.40	6	12 1/2	1/2	2	5.70	6.00
2	8	3/8	1 1/2	2.35	2.50	7	14	5/8	2 1/2	8.60	9.00
2 1/2	8 1/2	3/8	1 1/2	2.45	2.60	8	15	5/8	2 1/2	11.40	12.00
3	9	3/8	1 1/2	2.65	2.80	9	16	3/4	2 1/2	27.00	30.00
3 1/2	9 1/2	7/16	1 1/2	3.00	3.20	10	17 1/2	3/4	2 1/2	32.00	35.00

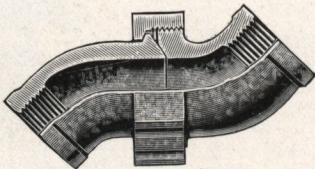


Fig. 424. Jefferson Seat

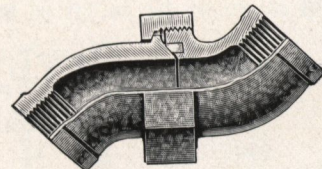


Fig. 425. Iron Seat

Size.....	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Plain Nut, Jefferson Seat, Black.....	.83	.83	.90	1.10	1.30	1.70	2.40	3.00	4.40	6.80
Plain Nut, Jefferson Seat, Galvanized.....	.89	.89	.97	1.30	1.50	2.00	2.80	3.50	5.40	8.30
Notched Nut, Jefferson Seat, Black.....	.91	.91	1.00	1.30	1.50	2.00	2.90	3.70	5.60	8.60
Notched Nut, Jefferson Seat, Galvanized.....	.65	.65	.72	.92	1.10	1.40	2.00	2.50	3.70	5.70
Plain Nut, Iron Seat, Black.....	.71	.71	.79	1.00	1.30	1.70	2.30	3.00	4.60	7.20
Plain Nut, Iron Seat, Galvanized.....										

O. S. Distributer

Their use insures free, positive, uniform circulation. Sizes read same as ordinary tees

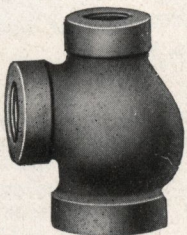
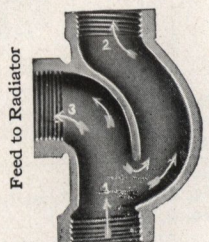


Fig. 426
O. S. Distributer

No.	Tappings, inches	Each	No.	Tappings, inches	Each
605	3/4 x 1/2 x 1/2	.50	619	1 1/2 x 1 x 1 1/4	.90
606	3/4 x 3/4 x 1/2	.50	620	1 1/2 x 1 1/4 x 1 1/4	.90
607	3/4 x 1/2 x 3/4	.50	621	1 1/2 x 1 1/4 x 1 1/2	.90
608	1 x 1/2 x 3/4	.60	622	1 1/2 x 1 1/2 x 1 1/4	.90
609	1 x 3/4 x 1/2	.60	623	1 1/2 x 1 1/2 x 1 1/2	.90
610	1 x 3/4 x 3/4	.60	624	2 x 1 1/4 x 1 1/2	1.20
611	1 x 3/4 x 1	.60	625	2 x 1 1/2 x 1 1/4	1.20
612	1 x 1 x 3/4	.60	626	2 x 1 1/2 x 1 1/2	1.20
613	1 x 1 x 1	.60	627	2 x 2 x 1 1/4	1.20
614	1 1/4 x 1 x 1	.80	628	2 x 2 x 1 1/2	1.20
615	1 1/4 x 1 x 1 1/4	.80	629	2 x 2 x 2	1.20
616	1 1/4 x 1 1/4 x 1	.80	630	2 1/2 x 1 1/2 x 1 1/2	2.00
617	1 1/4 x 1 1/4 x 1 1/4	.80	631	2 1/2 x 2 x 1 1/2	2.00
618	1 1/2 x 1 1/4 x 1	.90	632	2 1/2 x 2 x 2	2.00

Riser to Upper Floor



Flow Inlet
Section

Floor and Ceiling Plates

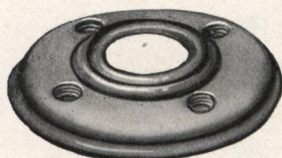


Fig. 430

Cast Iron

Size.....	1/2	3/4	1	1 1/4	1 1/2	2
Floor Plates, each..	.06	.06	.08	.11	.14	.16
Ceiling Plates, each	.11	.13	.16	.18	.23	.27

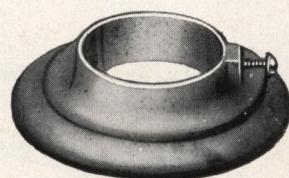


Fig. 431

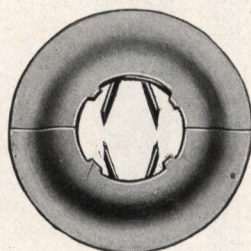


Fig. 432. Closed

In this plate the ribs inside serve the double purpose of affording a sufficient air space between the plate and the pipe to prevent the transmission of heat and also to assist in centering the plate when in position on the pipe. The self-adjusting springs, besides allowing for expansion and contraction of pipe, also secure the plate in place.

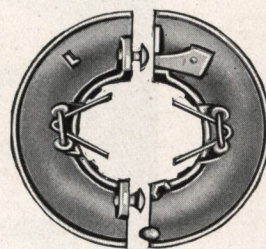


Fig. 432. Open

Adjustable Floor and Ceiling Plates

Size.....	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Black, each.....	.14	.14	.15	.16	.17	.20	.22	.25	.30	.50
N. P., each.....	.25	.25	.26	.27	.28	.32	.35	.38	.45	.65
Cast Brass, each.....	1.00	1.00	1.00	1.00	1.20	1.30	1.60	1.80	2.00	2.50

Size.....	3	3 1/2	4	4 1/2	5	6	7	8	10
Black, each.....	.65	.80	1.00	1.25	1.50	1.75	2.00	2.25	2.75
N. P., each.....	.80	1.00	1.25	1.50	1.75	2.00	2.25	2.50	3.00
Cast Brass, each.....	3.00	4.00	5.00	6.00	7.00	9.00	10.00	12.00	16.00

This is probably the most popular plate, both for shape and appearance, that is on the market at the present time, and the most satisfactory for the steam fitter to use, for the reason that it covers the requirements of any steam or hot water installation.

Rolled Steel Hinged, Reinforced, Floor and Ceiling Plates

Size.....	3/8	1/2	3/4	1	1 1/4	1 1/2
Black, each.....	.15	.16	.17	.20	.22	.25
N. P., each.....	.26	.27	.28	.32	.35	.38
Sheet Brass, each.....	.60	.62	.65	.72	.80	.85

Size.....	2	2 1/2	3	3 1/2	4
Black, each.....	.30	.50	.65	.80	1.00
N. P., each.....	.45	.65	.80	1.00	1.25
Sheet Brass, each.....	1.00	1.50	1.80	2.25	2.75

This cold rolled steel hinged floor and ceiling plate is easily applied and makes a neat and attractive finish. It is furnished plain, nickel-plated and in sheet brass. It is largely used for ordinary conditions and is an exceptionally popular low-priced plate.

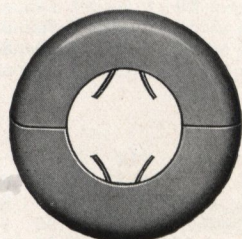


Fig. 433. Closed

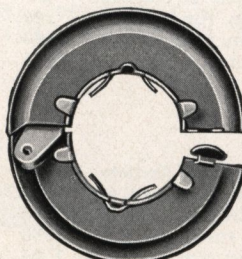


Fig. 433. Open

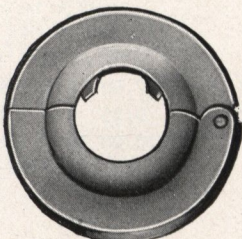


Fig. 434. Closed

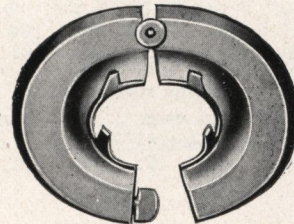


Fig. 434. Open

Cold Rolled Steel Hinged Floor and Ceiling Plates

Size.....	1/2	3/4	1	1 1/4	1 1/2
Black, each.....	.16	.17	.20	.22	.25
N. P., each.....	.27	.28	.32	.35	.38
Sheet Brass, each.....	.62	.65	.72	.80	.85

Size.....	2	2 1/2	3	3 1/2	4
Black, each.....	.30	.50	.65	.80	1.00
N. P., each.....	.45	.65	.80	1.00	1.25
Sheet Brass, each.....	1.00	1.50	1.80	2.25	2.75

Adjustable Floor and Ceiling Plates

Spring Brass, Nickel-plated, with Vents

Easily adjusted to the pipe and will stay in position. Will hold the nickel finish and always look well. Handsome in design and heavy in weight and finish.



Fig. 435. Closed

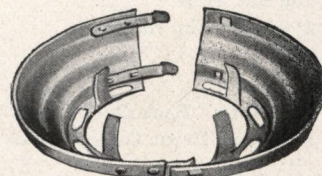


Fig. 435. Open

Size.....	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Nickel Brass, each.....	.25	.25	.25	.28	.32	.35	.38	.52	.75

Cast Iron Fittings

Branch Tees

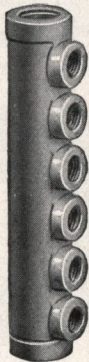


Fig. 442

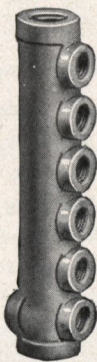


Fig. 444

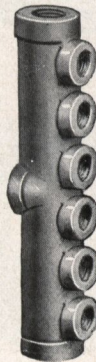


Fig. 446

3/4-inch Outlets. 2 1/4 inches C. to C., Fig. 442

Number of Outlets.....	2	3	4	5	6	7	8	9	10	12
1-inch run, each.....	.90	1.05	1.15	1.35	1.60	1.90	2.20	2.65	3.15	4.40

1-inch Outlets. 2 1/2 inches C. to C., Fig. 442

Number of Outlets.	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1 1/4-in. run, each...	.90	1.05	1.15	1.35	1.60	1.90	2.20	2.65	3.15	3.75	4.40	5.00			
1 1/2-in. run, each...	1.00	1.15	1.30	1.45	1.75	2.20	2.45	2.90	3.30	4.50	4.75	5.50	7.00	7.50	8.00
2-in. run, each.....	1.15	1.35	1.60	1.85	2.10	2.45	2.75	3.40	4.00	4.80	5.10	6.00	7.25	7.75	8.25

1 1/4-inch Outlets. 3 inches C. to C., Fig. 442

Number of Outlets.	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1 1/4-in. run, each...	1.30	1.65	2.00	2.40	2.80	3.20	3.60	4.30	4.80	5.00	5.25	6.00	6.75	7.50	8.50
1 1/2-in. run, each...	1.30	1.65	2.00	2.40	2.80	3.20	3.60	4.30	4.80	5.00	5.25	6.00	6.75	7.50	8.50
2-in. run, each.....	1.50	1.90	2.40	2.90	3.30	3.90	4.50	5.25	5.85	6.25	6.50	7.00	7.75	8.50	9.50
2 1/2-in. run, each...	1.95	2.40	2.85	3.55	3.95	4.20	4.95	6.15	6.85	7.25	7.65	8.25	9.00	9.75	10.75

1 1/2-inch Outlets. 3 1/2 inches C to C., Fig. 442

Number of Outlets.....	2	3	4	5	6	7	8	9	10	11	12
1 1/2-in. or 2-in. run, each.....	2.10	2.70	3.35	4.00	4.65	5.25	5.85	6.50	7.60	8.00	8.50
2 1/2-in. run, each.....	2.85	3.45	4.15	5.00	5.75	6.50	7.00	8.25	9.25	9.75	10.50
3-in. run, each.....	3.15	3.80	4.60	5.50	6.25	7.25	7.75	9.00	10.00	10.75	11.50

2-inch Outlets. 4 1/2 inches C. to C., Fig. 442

Number of Outlets.....	2	3	4	5	6	7	8	9	10	11	12
2-in run, each.....	4.10	5.25	6.40	7.65	8.80	10.60	11.50	12.25	13.50	14.25	15.00
2 1/2-in. or 3-in. run, each.....	4.50	5.75	7.00	8.50	9.75	11.75	12.75	13.50	15.00	15.75	16.50

Note: Back Outlet Tees, Figs. 444, 446, same list price as above, except that the Back Outlets will be charged as additional Front Outlets. For example, a Back Outlet Six-Branch Tee will be charged as a Seven-Branch Fig. 442 Tee.

Side Outlet Tees, or Tees with outlets larger than the run, to order at special prices. Always order by size and number. Fig. 442 Tees will be furnished unless otherwise ordered.

Back and Side Outlet Tees to order only and subject to factory delays.

Hook and Expansion Plates



Fig. 450. Hook Plate

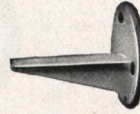
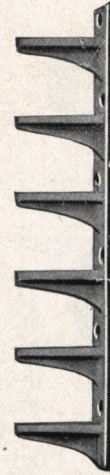

Fig. 451
Single Hook Plate

Fig. 452
Single Expansion Plate


Fig. 453. Expansion Plate

Hook Plates, Fig. 450 - 451

Number of Pipes	1	2	3	4	5	6	7	8	9	10	12
Hook Plates, $\frac{3}{4}$ -inch pipe, each	.08	.16	.21	.24	.28	.34	.40	.45	.50	.56	.72
Hook Plates, 1-inch pipe, each	.09	.18	.23	.26	.32	.38	.48	.59	.65	.70	1.00
Hook Plates, $1\frac{1}{4}$ -inch pipe, each	.10	.21	.27	.32	.41	.52	.68	.80	.90	1.20	1.40
Hook Plates, $1\frac{1}{2}$ -inch pipe, each	.15	.28	.43	.58	.72	.88	1.10	1.25	1.40	1.55	1.90
Hook Plates, 2-inch pipe, each	.22	.43	.65	.90	1.15	1.35	....	....	....	....	....

Expansion Plates Fig. 452 - 453

Number of Pipes	1	2	3	4	5	6	7	8	9	10	12
Expansion Plates, $\frac{3}{4}$ -inch pipe, each	.12	.23	.34	.45	.55	.65	.77	.90	1.05	1.25	1.65
Expansion Plates, 1-inch pipe, each	.15	.25	.35	.50	.60	.70	.80	.95	1.10	1.35	1.70
Expansion Plates, $1\frac{1}{4}$ -inch pipe, each	.17	.27	.40	.60	.70	.80	.90	1.15	1.30	1.50	2.00
Expansion Plates, $1\frac{1}{2}$ -inch pipe, each	.25	.40	.60	.75	.90	1.00	....	....	....	....	....
Expansion Plates, 2-inch pipe, each	.40	.60	.85	1.00	1.35	1.55	....	....	....	....	....

Saddles and Hanger Rolls



Fig. 454. Pipe Saddle



Fig. 456. Hanger Roll

Pipe Saddles

Number of Pipes	3	4	5	6	7	8	9	10
For 1-inch pipe, each	.60	.65	.70	.90	1.00	1.40	1.60	1.75
For $1\frac{1}{4}$ -inch pipe, each	.65	.75	.85	1.10	1.40	1.65	1.80	2.00

Hanger Rolls

Size, inches	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6	7	8
Size of Hole	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{7}{8}$	$\frac{7}{8}$	...	$\frac{15}{16}$	...	$1\frac{1}{8}$	$1\frac{1}{8}$	$1\frac{1}{8}$	$1\frac{1}{8}$
Black, each	.06	.07	.08	.13	.15	.18	.21	.21	.24	.24	.27	.36	.44

Adjustable Floor Sleeves



Fig. 457. Floor Sleeve

Price List, Not Including Plate

Size, pipe	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	5	6
No. 1, each	.25	.25	.32	.48	.55	.62	.75	1.00	1.25	1.40	1.85	2.25
No. 2, each	.35	.35	.52	.55	.60	.80	1.00	1.20	1.40	1.60	2.10	2.50

Minimum Length No. 1, 10 inches. No. 2, 14 inches. Maximum Length No. 1, 16 inches. No. 2, 24 inches.

Pipe Hangers



Fig. 462

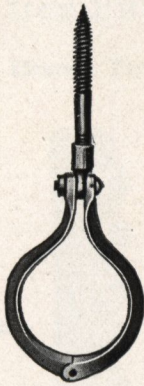


Fig. 463



Fig. 464

Malleable Iron Pipe Hangers

Size.....	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6	7	8	10	
Fig. 462, each.....	.10	.10	.12	.12	.14	.16	.18	.22	.28	.43	.53	.58	.63	.82	1.12	1.32	1.72	
Fig. 463, each.....	.15	.15	.18	.18	.20	.22	.25	.30	.35	.50	.60	.65	.70	.90	1.20	1.40	1.80	
Fig. 464, each.....	.55	.55	.58	.58	.60	.62	.65	.70	.95	1.10	1.20	1.25	1.35	1.50	1.80	2.00	2.40	
Size of Lag.....	1/8	1/8	1/8	1/8	1/4	1/4	1/4	1/4	1/4	3/8	3/8	3/8	1/2	1/2	1/2	1/2	1/2	
Clamp only to carry pipes 3/8 to 3 1/2 inches, each.....																		.40
Clamp only to carry pipes 3 1/2 to 10 inches, each.....																		.60

Steel Band Pipe Hangers

For Soil and Steam Pipes

Size.....	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6	7	8
Plain Iron, each....	.16	.18	.20	.22	.24	.26	.28	.32	.34	.36	.38	.42	.65	.90
Galv'd Iron, each..	.24	.27	.30	.33	.36	.40	.42	.48	.50	.54	.56	.63	.95	1.35

Extension Bar

As furnished with Band Hangers



Fig. 466

Steel Band Pipe Hanger

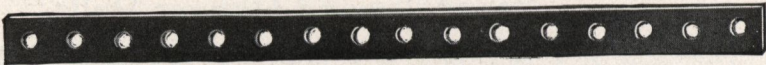


Fig. 465. Extension Bar

No. 1 for hangers 1/2 to 1 1/2 inches inclusive, per foot.....	10
No. 2 for hangers 2 to 3 inches inclusive, per foot.....	12
No. 3 for hangers 3 1/2 to 6 inches inclusive, per foot.....	14
No. 4 for hangers 7 to 8 inches inclusive, per foot.....	20

The bar furnished with above Hangers is shipped in 5-foot lengths, and can easily be cut in lengths as required. Above price is based on 6 inches to each hanger.

Astoria Pipe Hanger, Malleable Iron

Price each, Ring only

Size.....	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	7	8	
Plain Iron...	.15	.15	.18	.22	.27	.35	.40	.45	.50	.65	1.00	1.50	2.00	2.50	
Galv'd Iron..	.17	.17	.20	.25	.30	.40	.50	.60	.65	.80	1.50	2.00	2.50	3.00	
Tapped for..	1/4	1/4	1/4	1/4	1/4	1/4	1/4	3/8	1/2	1/2	3/4	3/4	1	1	
For Soil Pipe, Plain.....															.40
For Soil Pipe, Galv'd.....															.50
															.65
															.80
															1.50
															2.00
															2.50
															3.00

Same tapping for soil pipe sizes as for wrought pipe. Fig. 467 illustrates our Fig. 471 as made in the larger sizes and as connected to our new adjustable Beam Clamp.

Malleable Adjustable Clamps for Hangers 3/8 to 2 inches, each.....	.40
Malleable Adjustable Clamps for Hangers 2 1/2 to 8 inches, each.....	.60

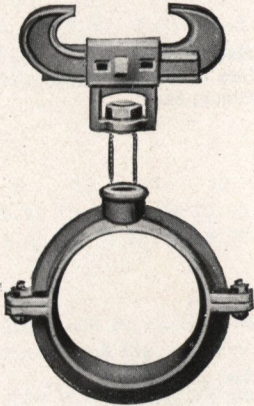


Fig. 467

Astoria Pipe Hanger

Ring Pipe Hangers



Fig. 470. Solid Ring

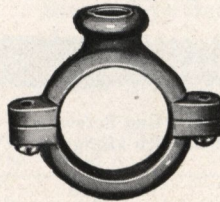


Fig. 471. Split Ring

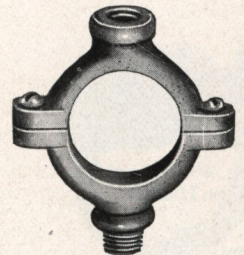
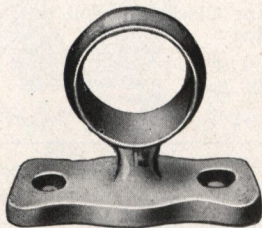
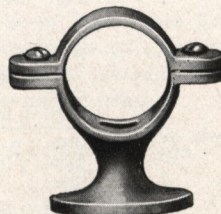
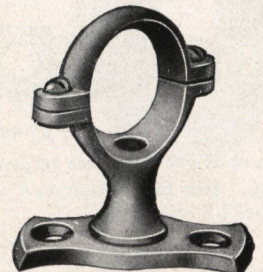
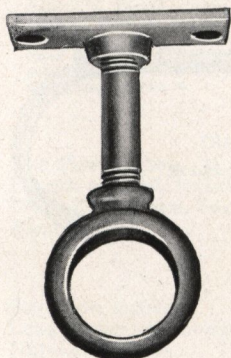


Fig. 472. Double Tapping

Size	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Solid Rings, Black, each			.08	.12	.15	.20	.25	.30	.40	.50	.60
Solid Rings, Galv'd, each			.18	.18	.20	.30	.37	.45	.55	.70	.85
Tapped for			$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
Split Ring, Black, each	.15	.15	.18	.22	.27	.35	.40	.45	.50		.65
Split Ring, Galv'd, each	.17	.17	.20	.25	.30	.40	.50	.60	.65		.80
Split Ring, Polished Brass, each	.50	.50	.60	.75	.85	1.00	1.15				
Split Ring, N. P. Brass, each	.55	.55	.65	.80	.90	1.10	1.25				
Double Tapping, Black, each	.22	.22	.27	.32	.35	.40	.50	.60	.70		.80
Double Tapping, Galv'd, each	.25	.25	.30	.35	.40	.50	.60	.70	1.00		1.10
Tapped for	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$		$\frac{1}{2}$

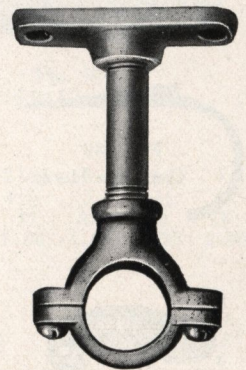
Fig. 473
Solid Ring Pipe HangerFig. 474
Concealed Screw Pipe HangerFig. 475
Swivel Base Pipe Hanger

Size	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Solid Ring, Black, per 100	5.00	5.00	5.80	7.75	10.00	14.00	22.00
Solid Ring, Galvanized, per 100	6.50	6.50	7.00	9.00	12.00	16.00	25.00
Solid Ring, Polished Brass, per 100	34.00	34.00	36.00	40.00	55.00	80.00	110.00
Solid Ring, N. P. Brass, per 100	36.00	36.00	38.00	45.00	60.00	90.00	125.00
Concealed Screw, Galvanized, per 100	17.00	17.00	20.00	25.00	30.00	40.00	50.00
Concealed Screw, Polished Brass, per 100	34.00	34.00	36.00	40.00	55.00	80.00	110.00
Concealed Screw, N. P. Brass, per 100	36.00	36.00	38.00	45.00	60.00	90.00	125.00
Swivel Base, Galvanized, per 100	17.00	17.00	20.00	25.00	30.00	40.00	50.00
Swivel Base, Polished Brass, per 100	50.00	50.00	60.00	75.00			
Swivel Base, N. P. Brass, per 100	55.00	55.00	65.00	80.00			

Fig. 476. Solid Ring
Extension Pipe Hanger

Size Pipe	Fig. 476 Each Less Nipple Black	Fig. 476 Each Less Nipple Galv'd	Fig. 476 Tapped for—	Fig. 477 Each Black Complete	Fig. 477 Each Galv'd Complete	Fig. 477 Each Galv'd Less Nipple	Fig. 477 Each Black Less Nipple
$\frac{3}{8}$	....	....	....	.22	.25	.20	.17
$\frac{1}{2}$	....	....	....	.22	.25	.20	.17
$\frac{3}{4}$	.17	.25	$\frac{1}{4}$	.27	.30	.25	.22
1	.18	.25	$\frac{1}{4}$	.32	.35	.30	.27
$1\frac{1}{4}$	.19	.28	$\frac{1}{4}$	.35	.40	.35	.30
$1\frac{1}{2}$	.25	.35	$\frac{1}{4}$	.40	.50	.45	.35
2	.29	.45	$\frac{1}{4}$	.50	.60	.55	.45
$2\frac{1}{2}$	.36	.55	$\frac{1}{2}$	.70	.80	.70	.65
3	.44	.65	$\frac{1}{2}$	.90	1.00	.90	.80
$3\frac{1}{2}$	.55	.80	$\frac{1}{2}$	....	....	....	....
4	.63	.95	$\frac{1}{2}$	1.10	1.25	1.15	1.00
$4\frac{1}{2}$	.90	1.35	$\frac{1}{2}$	....	....	....	....
5	1.12	1.65	$\frac{1}{2}$	1.40	1.75	1.65	1.30
6	1.35	2.00	$\frac{1}{2}$	1.90	2.25	2.15	1.80
7	1.80	2.75	$\frac{1}{2}$	2.50	3.00	2.90	2.40
8	2.25	3.50	$\frac{1}{2}$	3.00	3.50	3.40	2.90

Split Hangers are tapped $\frac{1}{4}$ inch sizes to 2-inch; $2\frac{1}{2}$ -inch tapped $\frac{3}{8}$; 3 and 4-inch, $\frac{1}{2}$ inch; 5 and 6, $\frac{3}{4}$ -inch; other sizes 1 inch.

Fig. 477. Split Ring
Extension Pipe Hanger

Pipe Clamps and Hooks

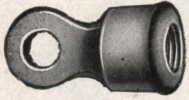


Fig. 480. Socket for Hangers

Size, inches	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1
Sockets, each	.08	.10	.12	.15	.20	...
Lag Screws, each	.08	.10	.12	.15	...	...
Flange, 2-hole, Plain, each	...	.10	.15	.20	...	...
Flange, 2-hole, Galvanized, each	...	.15	.20	.25	...	...
Flange, 4-hole, Plain, each	...	...	...	.20	.22	.25
Flange, 4-hole, Galvanized, each	...	...	...	.25	.28	.30
Dimensions, 2-hole Flange, each	...	$1\frac{1}{2} \times 3\frac{1}{4}$	$1\frac{5}{8} \times 3\frac{3}{4}$	$2\frac{1}{2} \times 4\frac{3}{4}$	$2\frac{1}{2} \times 4\frac{3}{4}$	$2\frac{1}{2} \times 4\frac{3}{4}$
Dimensions, 4-hole Flange, each	...	...	...	$2\frac{1}{2} \times 4\frac{3}{4}$	$2\frac{1}{2} \times 4\frac{3}{4}$	$2\frac{1}{2} \times 4\frac{3}{4}$



Fig. 481. Lag Screw as supplied with Hangers

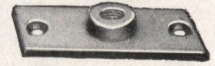


Fig. 482. Flange

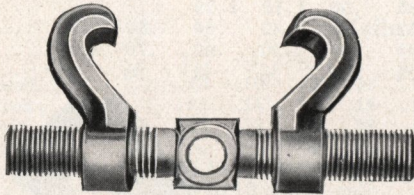


Fig. 483

Acme or Right and Left Malleable Iron Beam Clamp. Fits Beam Flanges $3\frac{1}{2}$ to 7 inches... Each .50



Fig. 484. Wrought Iron Pipe Clamp for Soil or Other Pipe

Size	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
$\frac{1}{4} \times 1\frac{1}{2}$ iron, each	.60	.60	.65	.70	.75	.90
Size	3	$3\frac{1}{2}$	4	5	6	...
$\frac{1}{4} \times 1\frac{1}{2}$ iron, each	1.10	1.20	1.25	1.40	1.60	...
Size	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	...
$\frac{3}{8} \times 1\frac{1}{2}$ iron, each	1.00	1.15	1.25	1.30	1.35	...
Size	$3\frac{1}{2}$	4	5	6	...	...
$\frac{3}{8} \times 1\frac{1}{2}$ iron, each	1.45	1.50	1.70	1.90	...	...



Fig. 485. Pipe Rest

Pipe Rests for Soil and Steam Pipe

Price, Each, Without Nipple

Size	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Plain Iron	.18	.18	.22	.27	.35	.40	.45	.50
Galvanized Iron	.20	.20	.25	.30	.40	.50	.60	.65
Tapped for	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$
Size	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6	7	8	...
Plain Iron	.60	.65	.75	.80	1.25	1.50	2.00	...
Galvanized Iron	.75	.80	.95	1.25	1.75	2.00	2.50	...
Tapped for	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	1	1	1	1	...

Square Plates furnished with above if desired

Gas Pipe Hooks

Fig. 486

Size	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Per 100	.23	.28	.33	.47	.60	.75	.95	1.25

Soil Pipe Hooks

Fig. 487

Size	2	3	4	5	6
Per 100	3.00	4.50	6.00	8.00	10.00
Extra Heavy, per 100	4.00	6.00	8.00	10.00	12.00

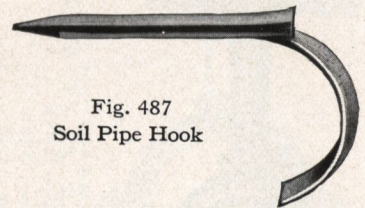


Fig. 487

Soil Pipe Hook

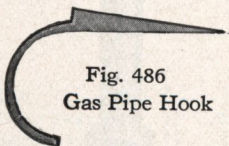


Fig. 486

Gas Pipe Hook

Fig. 488
Tinned Strap

Tinned Straps

Size	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Each	.01	.01	.01	.02	.02 $\frac{1}{2}$	.03	.04	.05

Saddles and Clamps

Steam Pipe Saddles

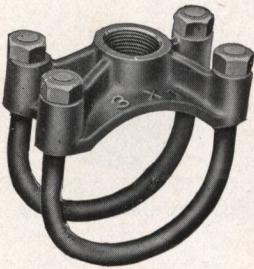


Fig. 491. Saddle

Double Strap Saddles

Pipe Size.....	2	3	4	4½	5	6	6
Tapped.....	1 to 2	1 to 2	1 to 2	1 to 2	1 to 2	1 to 2	2½ to 4
Each.....	1.00	1.00	1.25	2.50	2.75	2.50	5.75
Pipe Size.....	8	8	10	10	12	12	
Tapped.....	1 to 2	2½ to 4	1 to 2	2½ to 4	1 to 2	2½ to 4	
Each.....	4.50	6.50	5.50	6.75	6.25	8.75	

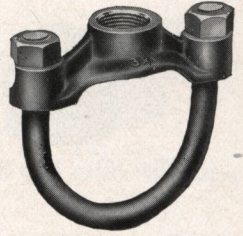


Fig. 492. Saddle

One-Clip Saddles Fig. 492

Pipe Size.....	½	¾	1	1¼	1½	2
Tapped.....	¼ to ½	¼ to ¾	¼ to 1	¼ to 1	¼ to 1½	
Each.....	1.00	1.00	1.00	1.00	1.00	1.00

Three-Clip Saddles

(Not Illustrated)

Pipe Size..	8	10	10	12	12	14	16	16	20
Tapped..	6	6	8	5 & 6	8	6	6	8	6
Each.....	31.00	39.00	52.00	52.00	92.00	66.00	76.00	92.00	130.00

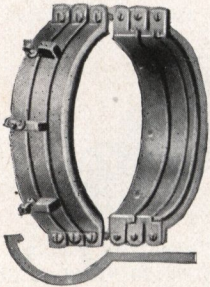


Fig. 493
Climax No. 1 Clamp

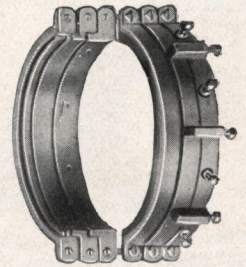


Fig. 494
Climax No. 2 Clamp

Climax Steam Joint Clamps
These Joints are made of Brass. No. 2 Clamp is recommended for places where it is impossible to use a spanner wrench, and also for all sizes 7 inch and larger. A permanent repair for screwed and flanged steam, liquid and ammonia joints.

Climax Clamps

Size.....				$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$
No. 1 and No. 2, each.....				1.50	1.50	1.90	2.25	3.00	3.75	4.50	5.25	6.00	6.75
Size.....	5	6	7	8	9	10	12	14	15	16	18	20	
No. 1 and No. 2, each....	7.50	9.00	10.50	13.00	15.75	18.75	22.50	31.50	33.75	36.00	40.50	45.00	

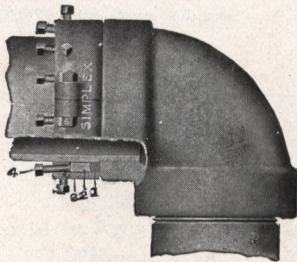


Fig. 495. Simplex Pipe Clamp

DESCRIPTION. 1. Square packing ring, forced against leaky joint. 2. Inside ring, forced against packing 1 by screws 4. 3. Outside ring, bolted around pipe by bolts 6, secured by set screws 5, prevents slipping when adjusting screws 4.

Simplex Pipe Clamp

Size.....	½	¾	1	1¼	1½	2	2½	3	3½	4
Each.....	1.50	1.50	1.50	1.90	2.25	3.00	3.75	4.50	5.25	6.00
Size.....	4½	5	6	7	8	9	10	12	14	15
Each.....	6.75	7.50	9.00	10.50	13.00	15.75	18.75	22.50	31.50	33.75
Size.....	16	18	20	21	22	24	26	28	30	32
Each.....	36.00	40.50	45.00	50.00	55.00	60.00	65.00	70.00	76.00	82.00

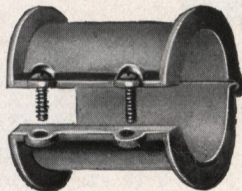


Fig. 496
For ½ to 4-inch Pipe

Emergency Pipe Clamps

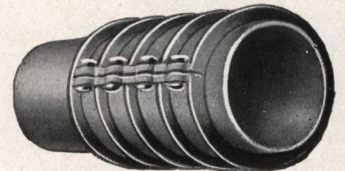


Fig. 497
For 4½ to 12-inch Pipe

Emergency Pipe Clamps, Fig. 496

Size Pipe, inches.....	½	¾	1	1¼	1½	2	2½	3	3½	4
Length over all, inches.....	3¼	3¼	3½	3¾	4	4¼	4½	5	5½	6
Weight per dozen, boxed, pounds.....	11	13	16	19	24	33	39	53	60	76
Each.....	.40	.45	.50	.60	.70	.80	1.00	1.25	1.50	2.00

Emergency Pipe Clamps, Fig. 497

Size Pipe, inches.....	4½	5	6	7	8	9	10	12
Length over all, inches.....	6½	7	8	9	9½	10	11	12
Number of Bolts.....	2	3	3	3	3	3	4	4
Each.....	4.50	5.00	6.00	7.00	8.00	9.00	10.00	12.00

Emergency Clamps are designed for repairing leaks and splits in pipe. Made of malleable iron. Complete with packing, ready for use.

Cast Iron Drainage Fittings



Fig. 501. 5 5/8" Elbow

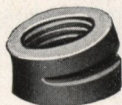


Fig. 502. 11 1/4" Elbow

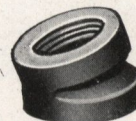


Fig. 503. 22 1/2" Elbow

5 5/8", 11 1/4" and 22 1/2" Elbows

Size, inches	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	7	8	10	12
Elbows, Black, each	.25	.28	.30	.38	.57	1.20	1.45	2.30	4.25	6.25	11.50	15.00	31.00	47.50
Price, Galv'd, each	.44	.49	.52	.67	1.00	2.10	2.55	4.00	7.40	11.00	20.00	26.25	54.00	83.00

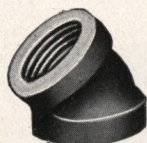


Fig. 504. 45° Short Turn Elbow



Fig. 505. 45° Long Turn Elbow

45° Elbows—Long and Short Turn

Size, inches	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
45° Short Turn Elbow, Price, Black, each	.25	.28	.30	.38	.57	1.20	1.45	2.30
45° Short Turn Elbow, Price, Galv'd, each	.44	.49	.52	.67	1.00	2.10	2.55	4.00
45° Long Turn Elbow, Price, Black, each	...	...	.35	.42	.65	1.40	1.75	2.75
45° Long Turn Elbow, Price, Galv'd, each	...	...	.50	.72	1.15	2.45	3.10	4.80

Size, inches	5	6	7	8	10	12	14	16
45° Short Turn Elbow, Price, Black, each	4.25	6.25	11.50	15.00	31.00	47.50	65.00	...
45° Short Turn Elbow, Price, Galv'd, each	7.40	11.00	20.00	26.25	54.00	83.00	114.00	...
45° Long Turn Elbow, Price, Black, each	5.25	7.50	13.50	19.00	38.00	57.50	75.00	100.00
45° Long Turn Elbow, Price, Galv'd, each	9.20	13.15	23.50	33.25	66.50	100.00	130.00	175.00



Fig. 506. 60° Elbow

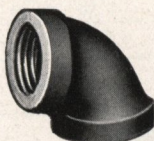


Fig. 507. 90° Short Turn Elbow



Fig. 508. 90° Long Turn Elbow

30°, 60° and 67 1/2° Elbows

Size, inches	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	7	8	10
Black, each	.25	.28	.30	.38	.57	1.20	1.45	2.30	4.25	6.25	11.50	15.00	31.00
Price, Galv'd, each	.44	.49	.52	.67	1.00	2.10	2.55	4.00	7.40	11.00	20.00	26.25	54.00

90° Elbow—Long and Short Turn

Size, inches	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
90° Elbow, Short Turn, Price, Black, each	.25	.28	.30	.38	.57	1.20	1.45	2.30
Price, Galv'd, each	.44	.49	.52	.67	1.00	2.10	2.55	4.00
90° Elbow, Long Turn, Price, Black, each	.30	.32	.35	.42	.65	1.40	1.75	2.75
Price, Galv'd, each	.52	.56	.60	.72	1.15	2.45	3.10	4.80

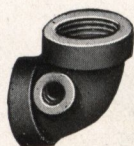
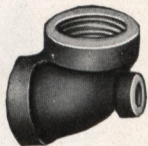
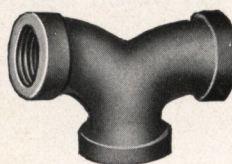
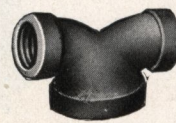
Size, inches	5	6	7	8	10	12	14
90° Elbow, Short Turn, Price, Black, each	4.25	6.25	11.50	15.00	31.00	47.50	65.00
Price, Galv'd, each	7.40	11.00	20.00	26.25	54.00	83.00	114.00
90° Elbow, Long Turn, Price, Black, each	5.25	7.50	13.50	19.00	38.00	57.50	75.00
Price, Galv'd, each	9.20	13.15	23.50	33.25	66.50	100.00	130.00

Note: The Outlet on 90° Elbows is tapped graded 1/4 inch to the foot unless otherwise ordered.

Malleable and Brass Drainage Fittings furnished at special prices.

In ordering, be particular to state whether Drainage Fittings are desired Black or Galvanized.

Cast Iron Drainage Fittings

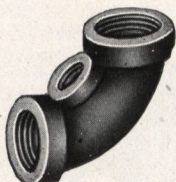
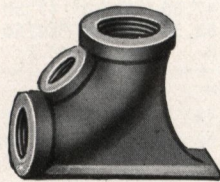
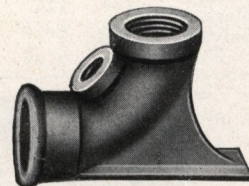
Fig. 510. 90° Elbow
With Side OutletFig. 511. 90° Elbow
With Heel OutletFig. 512
3-Way ElbowFig. 513
3-Way Elbow, Reducing

Elbows—Side Outlet and Heel Outlet

	Size	Size of Outlet	Price Black, Ea.	Price Galv., Each
90° Elbow, with Side Outlet.....	4	2	3.85	6.75
90° Elbow, with Heel Outlet.....	4	2	3.85	6.75

3-Way Elbows

Size, inches.....	1¼	1½	2	2½	3	4	4x3	5	5x4	6	6x4	6x5
Price, Black, each.....	.75	.85	1.10	2.25	3.00	5.00	5.50	7.50	8.25	13.50	15.00	15.00
Price, Galv'd, each.....	1.25	1.50	1.95	3.90	5.25	8.75	9.65	13.15	14.50	23.50	26.25	26.25

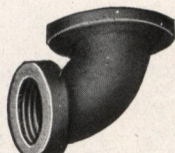
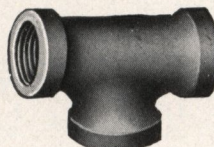
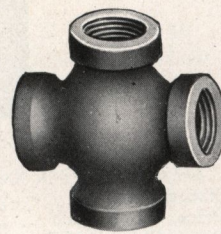
Fig. 514. 90° Long Turn Elbow
With CleanoutFig. 515. Base Elbow
With CleanoutFig. 516. Base Elbow
With Cleanout for Soil and Screwed Pipe

Elbows

Size, inches.....	2	3	4	5	6
90° Long Turn Elbow with Cleanout, price, Black, each.....	1.20	3.00	5.00	7.50	10.00
Price, Galvanized, each.....	2.10	5.25	8.75	13.00	17.50
90° Base Elbow with Cleanout, price, Black, each.....	3.00	4.50	7.00	12.00	18.00
Price, Galvanized, each.....	5.25	8.00	12.25	21.00	31.50
45° Elbow with Shoe, price, Black, each (Not Illustrated).....	1.00	1.75	2.75	4.50	6.75
Price, Galvanized, each.....	1.75	3.10	4.80	7.75	11.75

Base Elbows, Fig. 516

Size, inches.....	3x2	3	4x3	4	5x4	5	6x4	6x5	6	8x6	8
Price, Black, each.....	5.50	5.00	8.75	8.00	16.50	15.00	27.50	27.50	25.00	44.00	40.00
Price, Galvanized, each.....	9.50	8.75	15.25	14.00	28.75	26.25	48.00	48.00	43.75	77.00	70.00

Fig. 517
Closet Elbow ReducingFig. 518. Closet Elbow
With FlangeFig. 519
Basin TeeFig. 519A
Basin Cross

Closet Elbows

	Size	Price Black	Price Galv., Each
Closet Elbow, Reducing.....	5x4	4.25	7.40
Closet Elbow, with Flange.....	4	4.25	7.40

Basin Tees

Size, inches.....	1¼	1½	2	2x1½	2½	3
Price, Black, each.....	.60	.70	1.10	1.20	1.75	2.50
Price, Galvanized, each.....	1.00	1.22	1.95	2.10	3.00	4.25

Basin Crosses

Size, inches.....	1½	2	2x1½
Price, Black, each.....	1.50	1.75	1.95
Price, Galvanized, each.....	2.50	3.10	3.40

Cast Iron Drainage Fittings

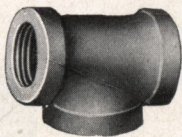


Fig. 522. Tee

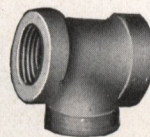


Fig. 523. Tee, Reducing

	Tees										
Size, inches.....	1¼	1½	2	2½	3	4	5	6	7	8	10
Price, Black, each.....	.45	.55	.80	1.50	2.00	3.25	6.00	8.75	16.00	21.00	43.00
Price, Galv'd, each.....	.80	1.00	1.40	2.50	3.50	5.70	10.50	15.25	28.00	37.00	75.00

	Tees—Reducing										
Size, inches.....	2x1½	2½x1½	2½x2	3x1½	3x2	4x2	4x3	5x2	5x3	5x4	6x2
Price, Black, each.....	.90	1.65	1.65	2.20	2.20	3.60	3.60	6.60	6.60	6.60	9.60
Price, Galvanized, each.....	1.60	2.75	2.75	3.85	3.85	6.30	6.30	11.55	11.55	11.55	16.75
Size, inches.....	6x3	6x4	6x5	7x4	7x5	7x6	8x4	8x5	8x6	8x7	10x4
Price, Black, each.....	9.60	9.60	9.60	17.60	17.60	17.60	23.00	23.00	23.00	23.00	47.30
Price, Galvanized, each.....	16.75	16.75	16.75	30.80	30.80	30.80	40.70	40.70	40.70	40.70	82.50
Size, inches.....			10x5	10x6	10x7	10x8	12x8	12x10	14x8	14x10	14x12
Price, Black, each.....			47.30	47.30	47.30	47.30	65.00	65.00	85.00	85.00	85.00
Price, Galvanized, each.....			82.50	82.50	82.50	82.50	110.00	110.00	145.00	145.00	145.00

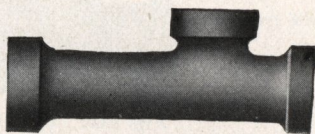


Fig. 524. Special Long T Y

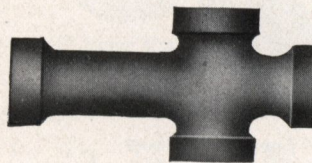


Fig. 525. Special Long Double T Y

Special Long T Y's

2-inch Spigot End for Soil Pipe connection, 1½-inch Head and Branch tapped for Wrot Iron Pipe.

	Size	Price, Blk., Ea.	Price, Galv., Ea.	Length	Center to Top
Special Long T Y's.....	2x1½	2.30	4.00	24	2½
Special Long T Y's.....	2x1½	3.35	5.85	34	2½
Special Long Double T Y's.....	2x1½	2.65	4.65	24	2½
Special Long Double T Y's.....	2x1½	3.65	6.40	34	2½



Fig. 526. Y-Branch



Fig. 527. Y-Branch, Reducing

	45° Y-Branches										
Size, inches.....	1	1¼	1½	2	2½	3	4	5	6	7	8
Price, Black, each.....	.45	.52	.65	.95	2.10	2.65	3.85	7.10	10.50	19.00	25.00
Price, Galv'd, each.....	.80	.90	1.15	1.65	3.70	4.65	6.75	12.50	18.50	33.25	44.00

	Reducing 45° Y-Branches										
Size, inches.....	1¼x1	1½x1¼	2x1¼	2x1½	2½x1¼	2½x1½	2½x2	3x1¼	3x1½	3x2	3x2½
Price, Black, each.....	.60	.72	1.05	1.05	2.30	2.30	2.30	2.90	2.90	2.90	4.25
Price, Galv'd, each.....	1.00	1.25	1.85	1.85	4.00	4.00	4.00	5.10	5.10	5.10	7.40
Size, inches.....	4x1½	4x2	4x2½	4x3	5x2	5x3	5x4	6x2	6x2½	6x3	6x4
Price, Black, each.....	4.25	4.25	4.25	4.25	7.80	7.80	7.80	11.50	11.50	11.50	11.50
Price, Galv'd, each.....	7.40	7.40	7.40	7.40	13.65	13.65	13.65	20.00	20.00	20.00	20.00
Size, inches.....	7x3	7x4	7x5	7x6	8x3	8x4	8x5	8x6	8x7	10x4	10x5
Price, Black, each.....	21.00	21.00	21.00	21.00	27.50	27.50	27.50	27.50	27.50	57.00	57.00
Price, Galv'd, each.....	37.00	37.00	37.00	37.00	48.00	48.00	48.00	48.00	48.00	97.00	97.00
Size, inches.....	10x7	10x8	12x6	12x8	12x10	14x3	14x4	14x5	14x6	14x12	
Price, Black, each.....	57.00	57.00	80.00	80.00	80.00	105.00	105.00	105.00	105.00	105.00	
Price, Galv'd, each.....	97.00	97.00	140.00	140.00	140.00	175.00	175.00	175.00	175.00	175.00	

The Inlets of Reducing Fittings are always the smallest openings.

Cast Iron Drainage Fittings



Fig. 534. 45° Double Y-Branch

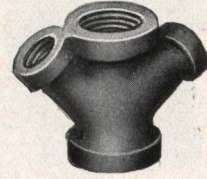


Fig. 536. 45° Double Y-Branch, Reducing

45° Double Y-Branches

Size, inches	1	1¼	1½	2	2½	3	4	5	6	7	8	10
Price, Black, each	.80	.90	1.00	1.45	3.25	4.00	5.75	10.75	16.00	28.50	38.00	78.00
Price, Galvanized, each	1.40	1.60	1.75	2.55	5.70	7.00	10.00	18.80	28.00	50.00	66.50	137.00

Reducing 45° Double Y-Branches

Size, inches	1¼x1	1½x1¼	2x1½	2½x1¼	2½x1½	2½x2	3x1½	3x2	4x2	4x3	5x2
Price, Black, each	1.00	1.10	1.60	3.60	3.60	3.60	4.40	4.40	6.35	6.35	11.75
Price, Galvanized, each	1.70	1.90	2.80	6.30	6.30	6.30	7.70	7.70	11.00	11.00	20.50
Size, inches	5x3	5x4	6x2	6x3	6x4	6x5	7x3	7x4	7x5	7x6	8x3
Price, Black, each	11.75	11.75	17.50	17.50	17.50	17.50	31.50	31.50	31.50	31.50	42.00
Price, Galvanized, each	20.50	20.50	30.50	30.50	30.50	30.50	54.00	54.00	54.00	54.00	72.00
Size, inches	8x4	8x5	8x6	8x7	10x4	10x5	10x6	10x7	10x8		
Price, Black, each	42.00	42.00	42.00	42.00	86.00	86.00	86.00	86.00	86.00		
Price, Galvanized, each	72.00	72.00	72.00	72.00	146.00	146.00	146.00	146.00	146.00		

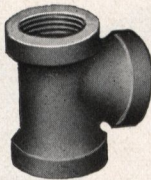


Fig. 538. 90° Y-Branch, Tee Pattern Short Turn

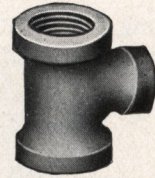


Fig. 539. 90° Y-Branch, Tee Pattern Reducing, Short Turn

90° Y-Branches—Tee Pattern—Short Turn

Size, inches	¾	1	1¼	1½	2	2½	3	4	5	6	7	8	10
Price, Black, each	.38	.40	.45	.57	.85	1.80	2.20	3.50	6.50	9.50	17.50	23.00	47.00
Price, Galvanized, each	.67	.70	.80	1.00	1.50	3.15	3.85	6.15	11.35	16.50	30.50	40.00	82.00

Reducing 90° Y-Branches—Tee Pattern—Short Turn

Size, inches	1x¾	1¼x1	1½x1	1½x1¼	2x1	2x1¼	2x1½	2x1½x1½	2x1½x2	2½x1¼	2½x1½
Price, Black, each	.55	.58	.63	.63	.95	.95	.95	.95	.95	2.00	2.00
Price, Galv'd, each	.95	1.00	1.10	1.10	1.65	1.65	1.65	1.65	1.65	3.50	3.50
Size, inches	2½x2	3x1¼	3x1½	3x2	4x1¼	4x1½	4x2	4x2½	4x3	5x1½	5x2
Price, Black, each	2.00	2.40	2.40	2.40	3.85	3.85	3.85	3.85	3.85	7.15	7.15
Price, Galvanized, each	3.50	4.20	4.20	4.20	6.75	6.75	6.75	6.75	6.75	12.50	12.50
Size, inches	5x2½	5x3	5x4	6x1½	6x2	6x3	6x4	6x5	7x3	7x4	7x5
Price, Black, each	7.15	7.15	7.15	10.50	10.50	10.50	10.50	10.50	19.00	19.00	19.00
Price, Galvanized, each	12.50	12.50	12.50	18.50	18.50	18.50	18.50	18.50	33.25	33.25	33.25
Size, inches	7x6	8x2	8x3	8x4	8x5	8x6	8x7	10x4	10x6	10x8	
Price, Black, each	19.00	25.50	25.50	25.50	25.50	25.50	25.50	52.00	52.00	52.00	
Price, Galvanized, each	33.25	44.50	44.50	44.50	44.50	44.50	44.50	88.00	88.00	88.00	

The Inlets on Reducing Fittings are always the smallest openings. The Inlet on 90° Y-Branches is tapped graded ¼ inch to the foot unless otherwise ordered. Malleable and Brass Drainage Fittings furnished at special prices.

In ordering, be particular to state whether Drainage Fittings are desired Black or Galvanized.

Cast Iron Drainage Fittings

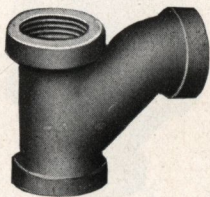


Fig. 542. 90° Y-Branch, Tee Pattern Long Turn



Fig. 544. 90° Y-Branch, Tee Pattern, Reducing Long Turn

90° Y-Branches, Tee Pattern—Long Turn

Size, inches	1¼	1½	2	2½	3	4	5	6	7	8	10
Price, Black, each	.57	.70	1.10	2.40	3.35	6.00	9.50	20.00	30.00	40.00	55.00
Price, Galvanized, each	1.00	1.22	1.95	4.20	5.85	10.50	16.50	35.00	52.50	70.00	90.00

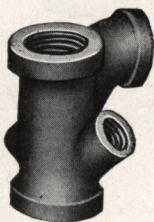
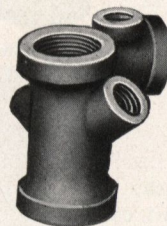
Reducing 90° Y-Branches, Tee Pattern—Long Turn

Size, inches	1¼x1	1½x1	1½x1¼	2x1¼	2x1½	2½x1	2½x1¼	2½x1½	2½x2	3x1½
Price, Black, each	.63	.80	.80	1.20	1.20	2.65	2.65	2.65	2.65	3.75
Price, Galvanized, each	1.10	1.40	1.40	2.10	2.10	4.65	4.65	4.65	4.65	6.55
Size, inches	3x2	3x2½	4x1½	4x2	4x2½	4x3	5x1½	5x2	5x2½	5x3
Price, Black, each	3.75	3.75	6.60	6.60	6.60	6.60	10.50	10.50	10.50	10.50
Price, Galvanized, each	6.55	6.55	11.55	11.55	11.55	11.55	18.50	18.50	18.50	18.50
Size, inches	5x4	6x2	6x3	6x4	6x5	7x3	7x4	7x5	7x6	8x3
Price, Black, each	10.50	22.00	22.00	22.00	22.00	33.00	33.00	33.00	33.00	44.00
Price, Galvanized, each	18.50	38.50	38.50	38.50	38.50	58.00	58.00	58.00	58.00	77.00
Size, inches		8x4	8x5	8x6	8x7	10x4	10x6	10x8	12x5	
Price, Black, each		44.00	44.00	44.00	44.00	60.00	60.00	60.00	85.00	
Price, Galvanized, each		77.00	77.00	77.00	77.00	102.00	102.00	102.00	150.00	

Long Turn TY—For 3-inch Soil Stack and 4-inch Water Closet Connection

Center to Face, 8¾ inches, Price, Black. 10.50 Center to Face, 8¾ inches, Price, Galvanized . . . 18.50

The Inlet of 90° Long Turn Y-Branches is tapped graded ¼ inch to the foot unless otherwise ordered. The Inlets on Reducing Fittings are always the smallest openings.

Fig. 546
Closet Tee with Inlets on Both SidesFig. 548
Closet Tee, with Inlets on Both Sides and Top

Long Turn 90° Y-Branches with Auxiliary Inlets—Closet Tees

Size, inches	3	4	5x4	6x4
Price, with 2-inch Inlet on Right Side only, Black, each	5.25	9.00	12.00	23.00
Price, with 2-inch Inlet on Right Side only, Galvanized, each	9.20	15.75	21.00	40.00
Price, with 2-inch Inlet on Left Side only, Black, each	5.25	9.00	12.00	23.00
Price, with 2-inch Inlet on Left Side only, Galvanized, each	9.20	15.75	21.00	40.00
Price, with 2-inch Inlet on Both Sides, Black, each	5.75	10.00	13.00	25.00
Price, with 2-inch Inlet on Both Sides, Galvanized, each	10.00	17.50	22.75	44.00
Price, with 2-inch Inlet on Right Side and 2-inch Top Inlet, Black, each	5.75	10.00	13.00	25.00
Price, with 2-inch Inlet on Right Side and 2-inch Top Inlet, Galvanized, each	10.00	17.50	22.75	44.00
Price, with 2-inch Inlet on Left Side and 2-inch Top Inlet, Black, each	5.75	10.00	13.00	25.00
Price, with 2-inch Inlet on Left Side and 2-inch Top Inlet, Galvanized, each	10.00	17.50	22.75	44.00
Price, with 2-inch Inlet on Both Sides and 2-inch Top Inlet, Black, each	6.50	11.00	14.50	28.00
Price, with 2-inch Inlet on Both Sides and 2-inch Top Inlet, Galvanized, each	11.35	19.25	25.50	49.00

The Inlets on Reducing Fittings are always the smallest openings.

We can furnish to order Fittings with Auxiliary Side Inlets only, from Short Pattern, if desired. Prices on application.

The 90° Inlets on Closet Tees are tapped graded ¼ inch to the foot unless otherwise ordered.

Malleable and Brass Drainage Fittings furnished at special prices.

Cast Iron Drainage Fittings

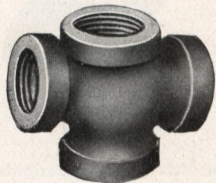


Fig. 551. Short Turn Cross
(90° Double Y-Branch, Tee Pattern, Short Turn)

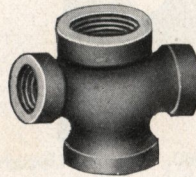


Fig. 552. Reducing Short Turn Cross
(90° Double Y-Branch, Reducing, Tee Pattern, Short Turn)

Short Turn Crosses

Size, inches	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	7	8	10
Price, Black, each	.60	.70	.85	1.30	2.85	3.40	5.25	9.50	14.00	25.00	36.00	60.00
Price, Galv'd., each	1.05	1.22	1.50	2.30	5.00	5.95	9.20	16.50	24.50	42.50	62.00	102.00

Reducing Short Turn Crosses

Size, inches	1 1/4x1	1 1/2x1	1 1/2x1 1/4	2x1 1/4	2x1 1/2	2 1/2x1 1/4	2 1/2x1 1/2	2 1/2x2	3x1 1/2
Price, Black, each	.77	.95	.95	1.50	1.50	3.15	3.15	3.15	3.75
Price, Galvanized, each	1.35	1.65	1.65	2.60	2.60	5.50	5.50	5.50	6.55
Size, inches	3x2	4x2	4x3	5x2	5x3	5x4	6x2	6x3	6x4
Price, Black, each	3.75	5.75	5.75	10.50	10.50	10.50	15.50	15.50	15.50
Price, Galvanized, each	6.55	10.00	10.00	18.50	18.50	18.50	27.00	27.00	27.00
Size, inches	6x5	7x4	8x3	8x4	8x5	8x6	10x4	10x6	10x8
Price, Black, each	15.50	27.50	40.00	40.00	40.00	40.00	66.00	66.00	66.00
Price, Galvanized, each	27.00	46.75	68.00	68.00	68.00	68.00	112.00	112.00	112.00

The Inlets of Short Turn Crosses are tapped graded $\frac{1}{4}$ inch to the foot unless otherwise ordered. The Inlets on Reducing Fittings are always the smallest openings.

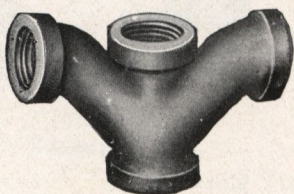


Fig. 553. Long Turn Cross
(90° Double Y-Branch, Tee Pattern, Long Turn)

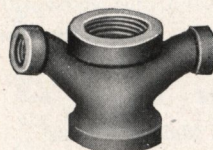


Fig. 554. Reducing Long Turn Cross
(90° Double Y-Branch, Reducing, Tee Pattern, Long Turn)

Long Turn Crosses

Size, inches	1 1/4	1 1/2	2	2 1/2	3	4	5	6	7	8	10
Price, Black, each	1.00	1.10	1.75	3.60	5.00	9.00	14.00	30.00	45.00	60.00	70.00
Price, Galvanized, each	1.75	1.95	3.10	6.30	8.75	15.75	24.50	52.50	79.00	105.00	119.00

Reducing Long Turn Crosses

Size, inches	1 1/4x1	1 1/2x1	1 1/2x1 1/4	2x1 1/4	2x1 1/2	2 1/2x1 1/4	2 1/2x1 1/2	2 1/2x2	3x1 1/2
Price, Black, each	1.10	1.25	1.25	1.90	1.90	4.00	4.00	4.00	5.50
Price, Galvanized, each	1.90	2.25	2.25	3.35	3.35	7.00	7.00	7.00	9.65
Size, inches	3x2	4x2	4x2 1/2	4x3	5x2	5x3	5x4	6x2	6x3
Price, Black, each	5.50	10.00	10.00	10.00	15.50	15.50	15.50	33.00	33.00
Price, Galvanized, each	9.65	17.50	17.50	17.50	27.00	27.00	27.00	58.00	58.00
Size, inches	6x4	6x5	7x4	8x3	8x5	8x6	10x4	10x6	10x8
Price, Black, each	33.00	33.00	50.00	66.00	66.00	66.00	77.00	77.00	77.00
Price, Galvanized, each	58.00	58.00	85.00	112.00	112.00	112.00	130.00	130.00	130.00

The Inlets of Long Turn Crosses are tapped graded $\frac{1}{4}$ inch to the foot unless otherwise ordered. The Inlets on Reducing Fittings are always the smallest openings.

Drainage Street Ells

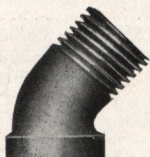


Fig. 555
45° Elbow

	Size	Price Black, each	Price Galvanized, each
45° Drainage Street Ell	1 1/2	.40	.70
90° Drainage Street Ell	1 1/2	.40	.70

Malleable and Brass Drainage Fittings furnished at special prices.
In ordering, be particular to state whether Drainage Fittings are desired
Black or Galvanized.

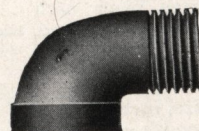


Fig. 556
90° Elbow

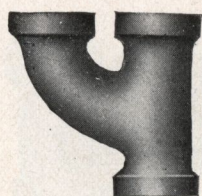


Fig. 560. Special Upright Y

Cast Iron Drainage Fittings



Fig. 561. 60° Y-Branch

Special Upright Y's

Size, inches	2	2x1¼	2x1½	2½	2½x1½	3	3x1½	3x2	4	4x2	6	6x4	10x8
Price, Black, each	2.65	2.90	2.90	4.00	4.50	5.50	6.00	6.00	8.00	8.75	15.00	16.50	....
Price, Galvanized, each	4.65	5.10	5.10	7.00	7.75	9.75	10.50	10.50	14.00	15.25	26.25	29.00	....

60° Y-Branches

Size, inches	1¼	1½	2	2x1½	3	3x2	4	4x2	4x3	5
Price, Black, each	.52	.65	.95	1.05	2.65	2.90	3.85	4.25	4.25	7.10
Price, Galvanized, each	.90	1.15	1.65	1.85	4.65	5.10	6.75	7.40	7.40	12.50
Size, inches	5x2	5x3	5x4	6	6x2	6x4	6x5	8x4	8x6	8x7
Price, Black, each	7.80	7.80	7.80	10.50	11.50	11.50	11.50	27.50	27.50	27.50
Price, Galvanized, each	13.65	13.65	13.65	18.50	20.00	20.00	20.00	48.00	48.00	48.00

Note: The Outlet of 90° Elbows is tapped graded ¼ inch to the foot unless otherwise ordered. The Inlets on Reducing Fittings are always the smallest openings.

Fig. 562
Brass Closet FlangeFig. 563
Iron Closet FlangeFig. 564
Tucker ConnectionFig. 565
IncreaserFig. 566
Coupling

Brass Closet Flanges

	Size	Diameter	Price
Brass Closet Flange, Male or Female	4	7	7.00

Iron Closet Flanges

	Size	Diameter	Price, Blk., Ea.	Price, Galv., Ea.
Iron Closet Flange	4	7	1.35	2.35
Iron Closet Flange	5	10	1.70	2.95

Tucker Connections

Size, inches	2	2½	3	4	5	6	8	10
Height, inches	4⅞	....	4¾	6¾	6⅞	7	7	7¼
Price, Black, each	.80	1.50	2.00	3.25	6.00	8.75	21.00	43.00
Price, Galvanized, each	1.40	2.45	3.50	5.70	10.50	15.25	37.00	75.00

Increasers

Size, inches	¾x1	¾x1¼	1x1¼	1x1½	1x2	1¼x2	1½x1¼	2x1½	2½x2
Height, inches	3⅞	3⅞	3⅞	5⅞	5⅞	5⅞	9	9	9
Price, Black, each	1.00	1.00	1.10	1.10	1.10	1.25	1.50	1.75	2.00
Price, Galvanized, each	1.75	1.75	1.85	1.85	1.85	2.25	2.60	3.00	3.50
Size, inches	3x2	3x2½	4x2	4x3	5x2	5x3	5x4	6x4	6x5
Height, inches	9	9	9	9	9	9	9	9	9
Price, Black, each	2.50	2.50	3.75	3.75	5.50	5.50	5.50	6.50	6.50
Price, Galvanized, each	4.40	4.40	6.55	6.55	9.65	9.65	9.65	11.35	11.35
Size, inches	7x6	8x6	8x7	10x8	12x10	14x6	14x8		
Height, inches	9	9	9	9	9	9	9		
Price, Black, each	12.00	15.00	15.00	20.00	40.00	55.00	55.00		
Price, Galvanized, each	20.00	26.25	26.25	35.00	70.00	95.00	95.00		

Couplings

Size, inches	1	1¼	1½	2	2½	3	4	5	6	7	8	10
Length, inches	2⅝	3	3⅞	3¾	4	4¼	4½	4¾	5	5½	5⅝	6¼
Price, Black, each	.65	.70	.80	.90	1.20	1.50	2.50	4.00	6.00	8.00	10.00	14.00
Price, Galvanized, each	1.15	1.25	1.40	1.60	2.10	2.60	3.40	7.00	10.50	14.00	17.50	24.50

Cast Iron Drainage Fittings

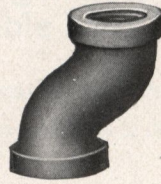


Fig. 572. Offset

Size, inches	3/4	3/4	3/4	1	1	1	1 1/4	1 1/4	1 1/2	1 1/2	1 1/2
Offset, inches	4	6	8	4	6	8	4	6	4	6	8
Length, inches	4 7/16	5	5 9/16	4 15/16	5 1/2	6	5 15/16	6 13/16	6 15/16	7 1/16	8
Price, Black, each	1.10	1.15	1.20	1.25	1.30	1.40	1.50	1.65	1.80	1.90	2.00
Price, Galvanized, each	1.92	2.00	2.10	2.20	2.28	2.45	2.65	2.90	3.15	3.35	3.50

Size, inches	2	2	2	2	3	3	3	3	4	4	4
Offset, inches	4	6	8	10	4	6	8	10	4	6	8
Length, inches	7 1/2	9 1/2	11 1/2	13 1/2	8 3/4	10 3/4	12 3/4	14 3/4	9 3/4	11 3/4	13 3/4
Price, Black, each	2.15	2.40	2.60	2.85	3.35	4.00	4.75	5.50	5.00	5.75	6.50
Price, Galvanized, each	3.75	4.20	4.55	5.00	5.85	7.00	8.30	9.65	8.75	10.00	11.35

Size, inches	4	4	5	5	5	5	5	6	6	6	6
Offset, inches	10	12	4	6	8	10	12	6	8	10	12
Length, inches	15 3/4	17 3/4	10 5/8	12 5/8	14 5/8	16 5/8	18 5/8	13 5/8	15 5/8	17 5/8	19 5/8
Price, Black, each	7.50	8.50	8.75	9.00	10.00	11.00	12.00	12.50	13.50	14.50	15.50
Price, Galvanized, each	13.15	15.00	15.35	15.75	17.50	19.25	21.00	22.00	23.50	25.50	27.00

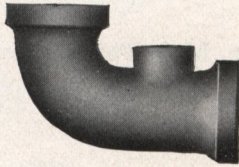


Fig. 573

Long Turn 90° Elbow with Vent

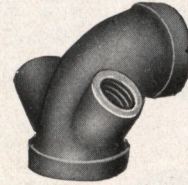


Fig. 574

90° Long Turn Elbow with Inlets on Both Sides

Long Turn 90° Elbow with Vent

	Size	Size of Vent	Cen. to End	Cen. to Top	Cen. Vent to End	Cen. to Top of Vent	Price Blk., Ea.	Price Galv., Ea.
Long Turn 90° Elbow with Vent	4	2	10 1/4	5 3/4	4 1/4	3 1/2	8.00	14.00

Long Turn 90° Elbows with Inlets on Both Sides

Size, inches	3	4	5	6
Size of Outlets, inches	2	2	2	2
Price, Black, each	3.50	5.50	10.50	15.00
Price, Galvanized, each	6.10	9.60	18.25	26.25

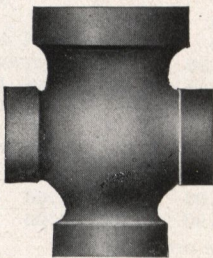


Fig. 575

Special Double TY with Hub for Soil Pipe Connection

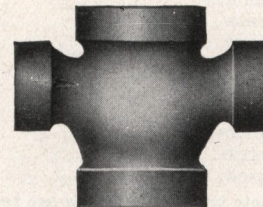


Fig. 576

Special Double TY Short Branch, Long Body for Narrow Wall or Close Connection

Special Double TY with Hub for Soil Pipe Connections

Size, inches	2x1 1/2
Black, each	5.35
Galvanized, each	9.35

Special Double TY—Short Branch, Long Body

Size, inches	1 1/4	1 1/4x1	1 1/2	2	2 1/2x1 1/2	2 1/2x2	2 1/2	3	3x1 1/2	3x2	4x2
Height, inches	4 13/16	4 13/16	5 3/8	6 3/8	5 3/4	6 3/8	7 3/16	9	6	7 5/8	7
Width, inches	2 1/4	2 1/4	2 1/2	3 1/16	3 11/16	3 7/16	3 11/16	4 3/8	3 3/4	3 3/4	4 1/4
Center to End, inches	2 15/16	2 15/16	3 3/16	3 11/16	3 11/16	4	4 7/16	6 1/4	3 5/8	5	4 1/4
Price, Black, each	.75	.85	1.25	2.00	3.60	3.80	4.00	5.50	6.00	6.00	7.00
Price, Galvanized, each	1.25	1.50	2.25	3.50	6.30	6.50	7.00	9.75	10.50	10.50	12.25

Cast Iron Drainage Fittings

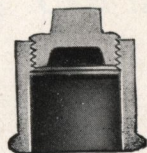
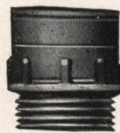
Fig. 580
Roof ConnectionFig. 581
I. B. Ferrule with Trap ScrewFig. 582
Brass Soldering Nipple

Fig. 583. Capping

Roof Connections

Size, inches	2	3	4	5	6
Price, Black, each	1.15	1.20	1.50	2.00	4.25
Price, Galvanized, each	2.00	2.10	2.60	3.50	7.40

Brass Soldering Nipples and Iron Body Ferrules

Size, inches	1	1 1/4	1 1/2	2	3	4	5	6
Price, Brass Soldering Nipples, each	.80	.90	1.05	1.50	2.75	4.00	9.00	.....
Price, Iron Body Ferrules, Black, each	.....	.....	.....	1.00	2.00	3.00	5.00	7.00
Price, Iron Body Ferrules, Galvanized, each	.....	.....	.....	1.75	3.50	5.25	8.75	12.25

Cappings—For Capping Air Inlet Pipes

Size, inches	2	3	4	5
Center to Center, inches	5 1/2	6	9 3/4	9 1/8
Price, Black, each	2.50	3.50	8.00	10.00
Price, Galvanized, each	4.25	6.00	14.00	17.50

Fig. 584. Brass Soldering Flange—Iron Pipe, Male Thread, Hex. Pattern

Size	1 1/4	1 1/2	2	3	4	5	6	7
Each	.32	.40	.56	1.20	1.60	3.00	4.60	6.00



Fig. 584

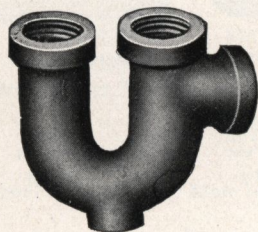


Fig. 585. Half S Trap

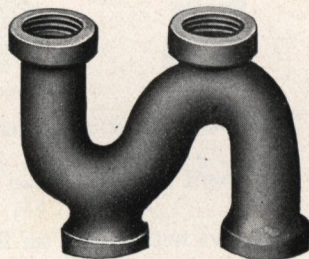


Fig. 586. S Trap

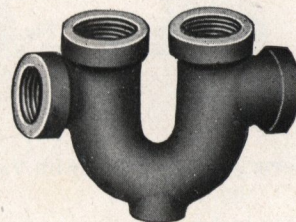


Fig. 587. Running Trap

Half S Traps

Size, inches	1 1/4	1 1/2	2	3	4	5	6	7	8	10
Size of Vent, inches	1 1/4	1 1/2	2	3	4	4	4	5	6	6
Price, Black, each	1.50	1.70	2.20	5.00	10.00	21.50	32.50	40.00	55.00	100.00
Price, Galvanized, each	2.65	3.00	3.85	8.75	17.50	37.50	57.00	70.00	95.00	175.00

S Traps

Size, inches	1 1/2	2	3	4	5	6	7	8
Size of Vent, inches	2	2	3	4	4	4	4	.....
Price, Black, each	3.25	4.00	9.25	14.00	21.00	36.00	45.00	60.00
Price, Galvanized, each	5.75	7.00	16.00	24.00	37.00	63.00	78.00	105.00

The Outlets on Half S Traps are tapped graded 1/4 inch to the foot unless otherwise ordered.

Three-quarter S Traps

Size, inches	2	3	4	5	6
Size of Vent, inches	2	3	4	4	4
Price, Black, each	4.00	9.25	14.00	21.00	36.00
Price, Galvanized, each	7.00	16.00	24.00	37.00	63.00

Running Traps

Size, inches	1 1/4	1 1/2	2	3	4	5	6	7	8	10
Size of Vent, inches	1 1/4	1 1/2	2	3	4	4	4	5	6	6
Price, Black, each	2.40	2.70	3.30	5.50	9.75	24.50	33.50	50.00	65.00	115.00
Price, Galvanized, each	4.20	4.70	5.75	9.50	17.00	43.00	58.50	87.50	115.00	200.00

The Inlet and Outlet on Running Traps are tapped graded 1/4 inch to the foot. Malleable and Brass Drainage Fittings furnished at special prices.

In ordering, be particular to state whether Drainage Fittings are desired Black or Galvanized.

Malleable Iron Fittings

Classification and Price List

Adopted June 5, 1907

Class	A	B	* C
Black, per pound.....	.40	.20	.12
Galvanized, per pound.....	.50	.28	.19
Caps.....	$\frac{1}{8}$	$\frac{1}{4}$ to 1 inclusive all sizes	$1\frac{1}{4}$ and larger
Chandelier Hooks.....		all sizes	
Chandelier Loops.....		all sizes	
Couplings, R. H.....	$\frac{1}{8}$	$\frac{1}{4}$ to $\frac{3}{4}$ inclusive $\frac{1}{4}$ to $\frac{3}{4}$	1 and larger
Couplings, R. & L.....	$\frac{1}{8}$	inclusive $\frac{1}{4}$ to $\frac{3}{4}$	1 and larger
Crosses, Straight sizes.....	$\frac{1}{8}$	inclusive $\frac{1}{4}$ to 1	$1\frac{1}{4}$ and larger
Crosses, Reducing.....		1 and smaller	$1\frac{1}{4}$ and larger
Drop Elbows.....		all sizes	
Drop Sockets.....		all sizes	
Drop Tees.....		all sizes	
Eccentric Reducing Couplings.....		$\frac{1}{2} \times \frac{1}{4}$ to $1 \times \frac{3}{4}$ inclusive	$1\frac{1}{4}$ and larger
Elbows.....	$\frac{1}{8}, \frac{1}{4} \times \frac{1}{8},$ $\frac{3}{8} \times \frac{1}{8}, \frac{1}{2} \times \frac{1}{8}$	$\frac{1}{4}, \frac{3}{8} \times \frac{1}{4}, \frac{3}{8}$ $\frac{1}{2} \times \frac{1}{4}, \frac{1}{2} \times \frac{3}{8}, \frac{1}{2}$	$\frac{3}{4}$ and larger
Elbows, Extra Heavy.....		$\frac{1}{2}$	$\frac{3}{4}$ and larger
Elbows, 45°.....		$\frac{1}{4}$ to 2 inclusive	$2\frac{1}{2}$ and larger
Elbows, 60°.....		$\frac{1}{4}$ to 2 inclusive	$2\frac{1}{2}$ and larger
Elbows, R. & L.....	$\frac{1}{8}, \frac{1}{4}, \frac{3}{8}$	$\frac{1}{2}, \frac{3}{4}, 1$ all sizes	$1\frac{1}{4}$ and larger
Elbows, Side Outlet or Three-way.....		all sizes	
Extension Pieces.....		all sizes	
Locknuts.....	$\frac{1}{8}$	$\frac{1}{4}$ to $1\frac{1}{4}$ inclusive	$1\frac{1}{2}$ and larger
Offsets.....		all sizes	
Oval Flanges.....		all sizes	
Pipe Hooks.....			all sizes
Plugs.....	$\frac{1}{8}$	$\frac{1}{4}$ to 1 inclusive	$1\frac{1}{4}$ and larger
Reducing Couplings.....	$\frac{1}{4} \times \frac{1}{8}, \frac{3}{8} \times \frac{1}{8}$ $\frac{1}{2} \times \frac{1}{8}$	$\frac{3}{8} \times \frac{1}{4}$ to $1 \times \frac{3}{4}$ inclusive	$1\frac{1}{4}$ and larger
Return Bends.....		$\frac{3}{8}$ to 1 inclusive	$1\frac{1}{4}$ and larger
Return Bends, R. & L.....	$\frac{3}{8}, \frac{1}{2}$ $\frac{3}{8}, \frac{7}{16}$	$\frac{3}{4}$ and larger $\frac{1}{2}, \frac{5}{8}, \frac{3}{4}$	
Rod Couplings.....			all sizes
Straps.....			1 and larger
Street Elbows.....	$\frac{1}{8}$	$\frac{1}{4}, \frac{3}{8}, \frac{1}{2}, \frac{3}{4} \times \frac{1}{2},$ $\frac{3}{4}, 1 \times \frac{3}{4}$	
Street Elbows, 45°.....	$\frac{3}{8}$	$\frac{1}{2}$ and larger $\frac{1}{4}, \frac{3}{8}, \frac{1}{2}, \frac{3}{4} \times \frac{1}{2},$ $\frac{3}{4}, 1 \times \frac{3}{4}, 1 \times \frac{3}{4} \times 1$	1 and larger
Street Tees.....			
Tees.....	$\frac{1}{8}, \frac{1}{8} \times \frac{1}{4}, \frac{1}{4} \times \frac{1}{8} \times \frac{1}{8},$ $\frac{1}{4} \times \frac{1}{8} \times \frac{1}{4}, \frac{1}{4} \times \frac{1}{8},$ $\frac{3}{8} \times \frac{1}{8}, \frac{1}{2} \times \frac{1}{8}$	$\frac{1}{4}, \frac{1}{4} \times \frac{3}{8}, \frac{3}{8} \times \frac{1}{4} \times \frac{1}{4},$ $\frac{3}{8} \times \frac{1}{4} \times \frac{3}{8}, \frac{3}{8} \times \frac{1}{4}, \frac{3}{8},$ $\frac{3}{8} \times \frac{1}{2}, \frac{3}{8} \times \frac{3}{4}, \frac{3}{8} \times 1,$ $\frac{1}{2}, \frac{1}{2}$ reducing	$\frac{3}{4}$ and larger
Tees, Extra Heavy.....		$\frac{1}{2}$	$\frac{3}{4}$ and larger
Tees, Side Outlet or Four-Way.....		all sizes	
Wall Plates.....		all sizes	
Wastenuits.....	$\frac{1}{8}$	$\frac{1}{4}$ and larger	
Y's, 45°.....		all sizes	
Y's, 60°.....		all sizes	
Y's, 90°.....		all sizes	
Y's, 45° Double.....		all sizes	

*Such fittings in Class C as have outlets smaller than $\frac{3}{4}$ inch will be classed as "B."

The run of Tees gives the size for purpose of classification; the outlet being larger does not change it.

Right-and-left fittings not classified take one class higher than right hand. For small quantities of right-and-left fittings we charge extra, according to actual time threading to order.

All straight and leading sizes and kinds of fittings are carried in stock galvanized.

Malleable Iron Fittings



Fig. 602. Elbow, Plain for Gas



Fig. 603. Elbow, Banded for Steam

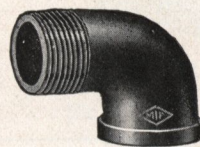


Fig. 604. Street Elbow, Banded

Plain and Banded Elbows

	Size	Class
Plain.....	$\frac{1}{8}$	A
Plain.....	$\frac{1}{4}$ x $\frac{1}{8}$	A
Plain and Flat Band.....	$\frac{1}{4}$	B
Plain and Flat Band.....	$\frac{3}{8}$ x $\frac{1}{8}$	A
Plain and Flat Band.....	$\frac{3}{8}$ x $\frac{1}{4}$	B
Plain and Flat Band.....	$\frac{3}{8}$	B
Plain and Flat Band.....	$\frac{1}{2}$ x $\frac{1}{8}$	A
Plain and Flat Band.....	$\frac{1}{2}$ x $\frac{1}{4}$	B
Plain and Flat Band.....	$\frac{1}{2}$ x $\frac{3}{8}$	B
Plain and Flat Band.....	$\frac{1}{2}$	B
Plain and Flat Band.....	$\frac{3}{4}$ x $\frac{1}{4}$	B
Plain and Flat Band.....	$\frac{3}{4}$ x $\frac{3}{8}$	B
Plain and Flat Band.....	$\frac{3}{4}$ x $\frac{1}{2}$	B
Plain and Flat Band.....	$\frac{3}{4}$	C
Plain and Flat Band.....	1 x $\frac{1}{4}$	B
Plain and Flat Band.....	1 x $\frac{3}{8}$	B
Plain and Flat Band.....	1 x $\frac{1}{2}$	B
Plain and Flat Band.....	1 x $\frac{3}{4}$	C
Plain and Flat Band.....	1	C
Plain and Flat Band.....	$1\frac{1}{4}$ x $\frac{3}{8}$	B
Plain and Flat Band.....	$1\frac{1}{4}$ x $\frac{1}{2}$	B
Plain and Flat Band.....	$1\frac{1}{4}$ x $\frac{3}{4}$	C
Plain and Flat Band.....	$1\frac{1}{4}$ x1	C
Plain and Flat Band.....	$1\frac{1}{4}$	C
Plain and Flat Band.....	$1\frac{1}{2}$ x $\frac{1}{2}$	B
Plain and Flat Band.....	$1\frac{1}{2}$ x $\frac{3}{4}$	C
Plain and Flat Band.....	$1\frac{1}{2}$ x1	C
Plain and Flat Band.....	$1\frac{1}{2}$ x1 $\frac{1}{4}$	C
Plain and Flat Band.....	$1\frac{1}{2}$	C
Plain and Flat Band.....	2 x $\frac{3}{4}$	C
Plain and Flat Band.....	2 x1	C
Plain and Flat Band.....	2 x1 $\frac{1}{4}$	C
Plain and Flat Band.....	2 x1 $\frac{1}{2}$	C
Plain and Flat Band.....	2	C
Flat Band.....	$2\frac{1}{2}$ x1 $\frac{1}{2}$	C
Flat Band.....	$2\frac{1}{2}$ x2	C
Flat Band.....	$2\frac{1}{2}$	C
Flat Band.....	3 x1	C
Flat Band.....	3 x1 $\frac{1}{2}$	C
Flat Band.....	3 x2	C
Flat Band.....	3 x2 $\frac{1}{2}$	C
Flat Band.....	3	C
Flat Band.....	$3\frac{1}{2}$ x2	C
Flat Band.....	$3\frac{1}{2}$ x2 $\frac{1}{2}$	C
Flat Band.....	$3\frac{1}{2}$ x3	C
Flat Band.....	$3\frac{1}{2}$	C
Flat Band.....	4 x3	C
Flat Band.....	4 x3 $\frac{1}{2}$	C
Flat Band.....	4	C

Plain and Banded Elbows—Continued

	Size	Class
Flat Band.....	$4\frac{1}{2}$	C
Flat Band.....	5	C
Flat Band.....	6	C

Street Elbows		Size	Class
Flat Band.....		$\frac{1}{8}$	A
Flat Band.....		$\frac{1}{4}$	B
Flat Band.....		$\frac{3}{8}$	B
Flat Band.....		$\frac{1}{2}$	B
Flat Band.....		$\frac{3}{4}$ x $\frac{1}{2}$	B
Flat Band.....		$\frac{3}{4}$	B
Flat Band.....		1 x $\frac{3}{4}$	B
Flat Band.....		1	C
Flat Band.....		$1\frac{1}{4}$ x $\frac{3}{4}$	C
Flat Band.....		$1\frac{1}{4}$ x1	C
Flat Band.....		$1\frac{1}{4}$ x1 $\frac{1}{2}$	C
Flat Band.....		$1\frac{1}{4}$	C
Flat Band.....		$1\frac{1}{2}$ x $\frac{3}{4}$	C
Flat Band.....		$1\frac{1}{2}$ x1	C
Flat Band.....		$1\frac{1}{2}$ x1 $\frac{1}{4}$	C
Flat Band.....		$1\frac{1}{2}$	C
Flat Band.....		2 x1	C
Flat Band.....		2 x1 $\frac{1}{4}$	C
Flat Band.....		2 x1 $\frac{1}{2}$	C
Flat Band.....		2	C
Flat Band.....		$2\frac{1}{2}$ x1 $\frac{1}{2}$	C
Flat Band.....		$2\frac{1}{2}$ x2	C
Flat Band.....		$2\frac{1}{2}$	C
Flat Band.....		3	C
Flat Band.....		$3\frac{1}{2}$	C
Flat Band.....		4	C

Fig. 606
45° Street or Service Elbow, Banded

	Size	Class
Flat Band.....	$\frac{3}{8}$	A
Flat Band.....	$\frac{1}{2}$	B
Flat Band.....	$\frac{3}{4}$	B
Flat Band.....	1	B
Flat Band.....	$1\frac{1}{4}$	B
Flat Band.....	$1\frac{1}{2}$	B
Flat Band.....	2	B
Flat Band.....	3	B

Where fittings are made both plain and banded, banded fittings will always be furnished unless otherwise specified.

Malleable Iron Fittings

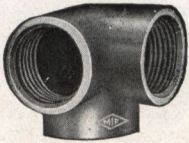
Fig. 610
Side Outlet ElbowsFig. 611
45° Elbow, Plain for GasFig. 612
45° Elbow. Flat BandFig. 613
60° Elbow

Fig. 610 S. O. Elbows

	Size	Class
Plain.....	1/4x 1/4x 1/4	B
Plain.....	3/8x 3/8x 1/4	B
Plain.....	3/8x 3/8x 3/8	B
Plain.....	1/2x 1/2x 1/4	B
Plain.....	1/2x 1/2x 3/8	B
Plain.....	1/2x 1/2x 1/2	B
Plain.....	3/4x 3/4x 3/8	B
Plain.....	3/4x 3/4x 1/2	B
Plain.....	3/4x 3/4x 3/4	B
Plain.....	1 x1 x 3/8	B
Plain.....	1 x1 x 1/2	B

Fig. 610—Continued

	Size	Class
Plain.....	1 x1 x 3/4	B
Plain.....	1 x1 x1	B
Plain.....	1 x1 x1 1/4	B
Plain.....	1 1/4x1 1/4x1	B
Plain.....	1 1/4x1 1/4x1 1/4	B
Plain.....	1 1/2x1 1/2x1 1/2	B
Plain.....	2 x2 x2	B

Figs. 611-612

Plain and Flat Band	1/4	B
Plain and Flat Band	3/8	B
Plain and Flat Band	1/2	B

Figs. 611-612—Continued

	Size	Class
Plain and Flat Band	3/4	B
Plain and Flat Band	1	B
Plain and Flat Band	1 1/4	B
Plain and Flat Band	1 1/2	B
Plain and Flat Band	2	B
Flat Band.....	2 1/2	C
Flat Band.....	3	C
Flat Band.....	3 1/2	C
Flat Band.....	4	C
Flat Band.....	5	C
Flat Band.....	6	C

We have patterns for and can make to order Extra Heavy 45° Elbows, sizes 3/4 inch to 2 inches inclusive.

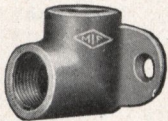
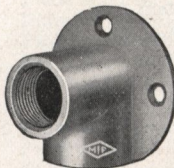
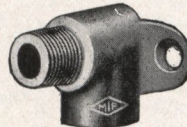
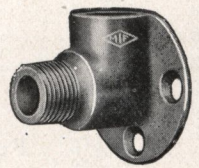
60° Elbows

	Size	Class
Plain.....	1/4	B
Plain.....	3/8	B
Plain.....	1/2	B

	Size	Class
Plain.....	3/4	B
Plain.....	1	B
Plain.....	1 1/4	B
Plain.....	1 1/2	B

	Size	Class
Plain.....	2	B
Plain.....	2 1/2	C
Plain.....	3	C

In tapping our fittings we follow strictly the Briggs Standard of pipe thread.

Fig. 614
Drop Elbow
FemaleFig. 615
Drop Elbow
Round FlangeFig. 616
Drop Elbow
Male and FemaleFig. 617
Drop Elbow
Round Flange

Drop Elbows, Female

	Size	Class
Plain.....	1/4x 1/4	B
Plain.....	3/8x 1/4	B
Plain.....	3/8x 3/8	B
Plain.....	1/2x 3/8	B
Plain.....	1/2x 1/2	B
Plain.....	3/4x 1/2	B
Plain.....	3/4x 3/4	B
Plain.....	1x1	B

	Size	Class
Plain.....	1/4x 1/4	B
Plain.....	1/4x 3/8	B
Plain.....	3/8x 1/4	B
Plain.....	3/8x 3/8	B
Plain.....	3/8x 1/2	B
Plain.....	1/2x 3/8	B
Plain.....	1/2x 1/2	B
Plain.....	3/4x 3/4	B

Drop Elbows, Male and Female

	Size	Class
Plain.....	1/8x 3/8	B
Plain.....	1/4x 3/8	B
Plain.....	3/8x 3/8	B
Plain.....	1/2x 3/8	B
Plain.....	3/4x 3/8	B

	Size	Class
Plain.....	1/4x 1/4	B
Plain.....	1/4x 3/8	B
Plain.....	3/8x 3/8	B
Plain.....	1/2x 3/8	B
Plain.....	1/2x 1/2	B

Malleable Iron Fittings

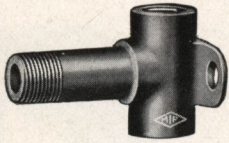


Fig. 620
Drop Elbow, Male and Female
Drop 2 1/2 inches long

	Size	Class
Plain.....	1/4x3/8	B
Plain.....	3/8x3/8	B



Fig. 621
Drop Elbow, Flange Right Side

	Size	Class
Plain.....	1/4x3/8	B
Plain.....	3/8x3/8	B

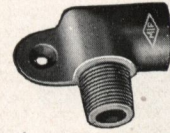


Fig. 622
Drop Elbow, Flange Left Side

	Size	Class
Plain.....	1/4x3/8	B
Plain.....	3/8x3/8	B

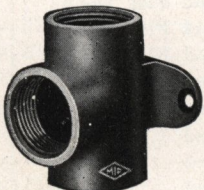


Fig. 623
Drop Tee, Female



Fig. 624
Drop Tee, Round Flange, Female

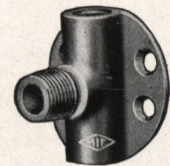


Fig. 625. Drop Tee
Round Flange, Male and Female

Drop Tee, Fig. 623

	Size	Class		Size	Class
	Drop			Drop	
Plain.....	1/4x1/4x1/4	B	Plain.....	3/4x 1/2x 3/8	B
Plain.....	3/8x1/4x1/4	B	Plain.....	3/4x 3/4x 1/4	B
Plain.....	3/8x3/8x1/4	B	Plain.....	3/4x 3/4x 3/8	B
Plain.....	3/8x3/8x3/8	B	Plain.....	3/4x 3/4x 1/2	B
Plain.....	1/2x3/8x1/4	B	Plain.....	3/4x 3/4x 3/4	B
Plain.....	1/2x3/8x3/8	B	Plain.....	1 x 3/4x 3/8	B
Plain.....	1/2x1/2x1/4	B	Plain.....	1 x1 x 3/8	B
Plain.....	1/2x1/2x3/8	B	Plain.....	1 x1 x 1/2	B
Plain.....	1/2x1/2x1/2	B	Plain.....	1 x1 x 3/4	B
Plain.....	3/4x1/2x1/4	B	Plain.....	1 x1 x1	B

Drop Tees

Fig. 624

	Size	Class
	Drop	
Plain.....	1/4x1/4x1/4	B
Plain.....	3/8x3/8x3/8	B

Fig. 625

	Size	Class
	Drop	
Plain.....	1/4x1/4x3/8	B
Plain.....	3/8x3/8x3/8	B
Plain.....	1/2x1/2x3/8	B
Plain.....	3/4x3/4x3/8	B

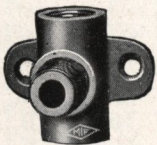


Fig. 626
Drop Tee

Drop Tees

Male and Female

Fig. 626

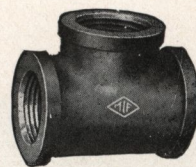
	Size	Class
	Drop	
Plain.....	1/4x1/4x3/8	B
Plain.....	3/8x1/4x3/8	B
Plain.....	3/8x3/8x3/8	B
Plain.....	1/2x3/8x3/8	B
Plain.....	1/2x1/2x3/8	B



Fig. 627. Drop Tee
With Drop 2 1/2 inches Long

Fig. 627

	Size	Class
	Drop	
Plain.....	3/8x3/8x3/8	B



Tees

In describing Tees the run is first named, then the outlet, thus:

Fig. 636. Tee
Flat Band for Steam

[illegible]

Malleable Iron Fittings

Street or Service Tees

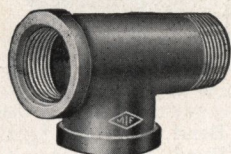


Fig. 642
Street or Service Tee

	Size	Class		Size	Class
Flat Band.....	$\frac{1}{4}$	B	Flat Band.....	$1\frac{1}{2} \times 1 \times 1$	C
Flat Band.....	$\frac{3}{8}$	B	Flat Band.....	$1\frac{1}{2} \times 1\frac{1}{4} \times 1\frac{1}{4}$	C
Flat Band.....	$\frac{1}{2}$	B	Flat Band.....	$1\frac{1}{2} \times 1 \times 1\frac{1}{2}$	C
Flat Band.....	$\frac{3}{4} \times \frac{1}{2}$	B	Flat Band.....	$1\frac{1}{2} \times 1\frac{1}{4} \times 1\frac{1}{2}$	C
Flat Band.....	$\frac{3}{4}$	B	Flat Band.....	$1\frac{1}{2}$	C
Flat Band.....	$1 \times \frac{3}{4} \times 1$	B	Flat Band.....	$2 \times \frac{3}{4} \times 1\frac{1}{4}$	C
Flat Band.....	$1 \times \frac{3}{4}$	B	Flat Band.....	$2 \times \frac{3}{4} \times 1\frac{1}{2}$	C
Flat Band.....	1	C	Flat Band.....	$2 \times \frac{3}{4} \times 2$	C
Flat Band.....	$1\frac{1}{4} \times \frac{3}{4} \times 1\frac{1}{4}$	C	Flat Band.....	$2 \times 1 \times 2$	C
Flat Band.....	$1\frac{1}{4} \times 1 \times 1$	C	Flat Band.....	$2 \times 1\frac{1}{4} \times 2$	C
Flat Band.....	$1\frac{1}{4} \times 1\frac{1}{4} \times 1$	C	Flat Band.....	$2 \times 1\frac{1}{2} \times 2$	C
Flat Band.....	$1\frac{1}{4} \times 1 \times 1\frac{1}{4}$	C	Flat Band.....	2	C
Flat Band.....	$1\frac{1}{4}$	C	Flat Band.....	$2\frac{1}{2} \times 2 \times 2\frac{1}{2}$	C
Flat Band.....	$1\frac{1}{2} \times \frac{3}{4} \times \frac{3}{4}$	C	Flat Band.....	$2\frac{1}{2}$	C
Flat Band.....	$1\frac{1}{2} \times \frac{3}{4} \times 1$	C	Flat Band.....	$3 \times 2\frac{1}{2} \times 3$	C
Flat Band.....	$1\frac{1}{2} \times \frac{3}{4} \times 1\frac{1}{4}$	C	Flat Band.....	3	C
Flat Band.....	$1\frac{1}{2} \times \frac{3}{4} \times 1\frac{1}{2}$	C			

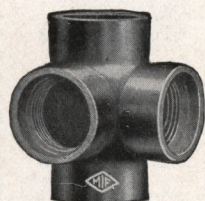


Fig. 644
Side Outlet Tee

Side Outlet Tees

	Size	Class
Plain.....	$\frac{3}{8}$	B
Plain.....	$\frac{1}{2}$	B
Plain.....	$\frac{3}{4}$	B
Plain.....	1	B
Plain.....	$1\frac{1}{4}$	B
Plain.....	$1\frac{1}{2}$	B
Plain.....	2	B

Crosses

The Outlets of a Cross are always the same size

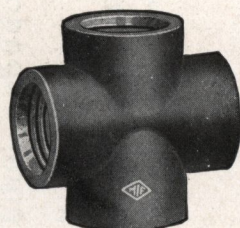


Fig. 646
Cross, Plain for Gas

	Size	Class		Size	Class
Plain.....	$\frac{1}{8}$	A	Plain and Flat Band..	$1\frac{1}{2} \times 1\frac{1}{4} \times 1\frac{1}{4}$	B
Plain and Flat Band..	$\frac{1}{4}$	B	Plain and Flat Band..	$1\frac{1}{2} \times \frac{3}{8}$	B
Plain and Flat Band..	$\frac{1}{4} \times \frac{1}{8}$	A	Plain and Flat Band..	$1\frac{1}{2} \times \frac{1}{2}$	C
Plain.....	$\frac{3}{8} \times \frac{1}{4} \times \frac{1}{4}$	B	Plain and Flat Band..	$1\frac{1}{2} \times \frac{3}{4}$	C
Plain and Flat Band..	$\frac{3}{8} \times \frac{1}{4}$	B	Plain and Flat Band..	$1\frac{1}{2} \times 1$	C
Plain and Flat Band..	$\frac{3}{8}$	B	Plain and Flat Band..	$1\frac{1}{2} \times 1\frac{1}{4}$	C
Plain.....	$1\frac{1}{2} \times \frac{3}{8} \times \frac{1}{4}$	B	Plain and Flat Band..	$1\frac{1}{2}$	B
Plain.....	$1\frac{1}{2} \times \frac{3}{8} \times \frac{3}{8}$	B	Plain and Flat Band..	$2 \times \frac{3}{8}$	B
Plain.....	$1\frac{1}{2} \times \frac{3}{8} \times \frac{1}{2}$	B	Plain and Flat Band..	$2 \times \frac{1}{2}$	C
Plain.....	$1\frac{1}{2} \times \frac{1}{4}$	B	Plain and Flat Band..	$2 \times \frac{3}{4}$	C
Plain.....	$1\frac{1}{2} \times \frac{3}{8}$	B	Plain and Flat Band..	2×1	C
Plain and Flat Band..	$1\frac{1}{2} \times \frac{3}{8}$	B	Plain and Flat Band..	$2 \times 1\frac{1}{4}$	C
Plain and Flat Band..	$\frac{3}{4} \times \frac{3}{8} \times \frac{1}{2}$	B	Plain and Flat Band..	$2 \times 1\frac{1}{2}$	C
Plain and Flat Band..	$\frac{3}{4} \times \frac{1}{2} \times \frac{3}{8}$	B	Plain and Flat Band..	2	C
Plain and Flat Band..	$\frac{3}{4} \times \frac{1}{2} \times \frac{1}{2}$	B	Flat Band.....	$2\frac{1}{2} \times 1$	C
Plain and Flat Band..	$\frac{3}{4} \times \frac{3}{8}$	B	Flat Band.....	$2\frac{1}{2} \times 1\frac{1}{4}$	C
Plain and Flat Band..	$\frac{3}{4} \times \frac{1}{2}$	B	Flat Band.....	$2\frac{1}{2} \times 1\frac{1}{2}$	C
Plain and Flat Band..	$\frac{3}{4}$	B	Flat Band.....	$2\frac{1}{2} \times 2$	C
Plain and Flat Band..	$1 \times \frac{1}{2} \times \frac{3}{8}$	B	Flat Band.....	$2\frac{1}{2}$	C
Plain and Flat Band..	$1 \times \frac{3}{4} \times \frac{3}{8}$	B	Flat Band.....	3×1	C
Plain and Flat Band..	$1 \times \frac{3}{4} \times \frac{1}{2}$	B	Flat Band.....	$3 \times 1\frac{1}{4}$	C
Plain and Flat Band..	$1 \times \frac{3}{4} \times \frac{3}{4}$	B	Flat Band.....	$3 \times 1\frac{1}{2}$	C
Plain and Flat Band..	$1 \times \frac{3}{8}$	B	Flat Band.....	3×2	C
Plain and Flat Band..	$1 \times \frac{1}{2}$	B	Flat Band.....	$3 \times 2\frac{1}{2}$	C
Plain and Flat Band..	$1 \times \frac{3}{4}$	B	Flat Band.....	3	C
Plain and Flat Band..	1	B	Flat Band.....	$4 \times 1\frac{1}{2}$	C
Plain and Flat Band..	$1\frac{1}{4} \times 1 \times \frac{3}{4}$	C	Flat Band.....	4×2	C
Plain and Flat Band..	$1\frac{1}{4} \times 1 \times 1$	C	Flat Band.....	$4 \times 2\frac{1}{2}$	C
Plain and Flat Band..	$1\frac{1}{4} \times \frac{3}{8}$	B	Flat Band.....	4×3	C
Plain and Flat Band..	$1\frac{1}{4} \times \frac{1}{2}$	B	Flat Band.....	4	C
Plain and Flat Band..	$1\frac{1}{4} \times \frac{3}{4}$	C	Flat Band.....	5	C
Plain and Flat Band..	$1\frac{1}{4} \times 1$	C	Flat Band.....	6	C
Plain and Flat Band..	$1\frac{1}{4}$	C			

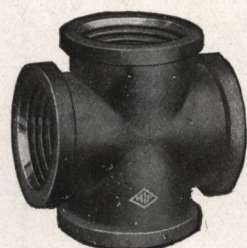


Fig. 648
Cross, Flat Band for Steam

Malleable Iron Fittings

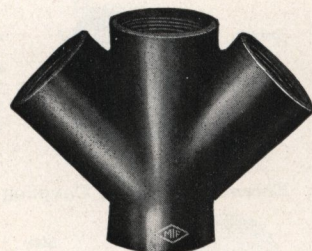
Y-Branched 45°

Fig. 650
Y-Branch, Plain

	Size	Class
Flat Band.....	$\frac{1}{4}$	B
Flat Band.....	$\frac{3}{8}$	B
Flat Band.....	$\frac{1}{2}$	B
Flat Band.....	$\frac{3}{4}$ x $\frac{1}{2}$	B
Plain and Flat Band..	$\frac{3}{4}$	B
Flat Band.....	1 x $\frac{1}{2}$	B
Flat Band.....	1 x $\frac{3}{4}$	B
Plain and Flat Band..	1	B
Flat Band.....	$1\frac{1}{4}$ x $\frac{3}{4}$	B
Plain and Flat Band..	$1\frac{1}{4}$ x 1	B
Plain and Flat Band..	$1\frac{1}{4}$	B
Flat Band.....	$1\frac{1}{2}$ x $\frac{3}{4}$	B
Plain and Flat Band..	$1\frac{1}{2}$ x 1	B
Plain.....	$1\frac{1}{2}$ x $1\frac{1}{4}$	B
Plain.....	$1\frac{1}{2}$	B

Fig. 651
Y-Branch with Flat Band

	Size	Class
Plain.....	2 x $1\frac{1}{2}$ x $1\frac{1}{2}$	B
Plain.....	2 x $1\frac{1}{2}$ x 2	B
Plain and Flat Band	2 x 1	B
Plain and Flat Band	2 x $1\frac{1}{4}$	B
Plain and Flat Band	2 x $1\frac{1}{2}$	B
Plain and Flat Band	2	B
Plain.....	$2\frac{1}{2}$ x 2 x 2	B
Plain and Flat Band	$2\frac{1}{2}$ x 2	B
Flat Band.....	$2\frac{1}{2}$	B
Flat Band.....	3 x $2\frac{1}{2}$ x 2	B
Flat Band.....	3	B
Flat Band.....	4 x 3	B
Flat Band.....	4	B
Flat Band.....	5	B
Flat Band.....	6	B

Fig. 652
Double Y-Branch, Plain, 45°

	Size	Class
Plain.....	$\frac{1}{2}$	B
Plain.....	$\frac{3}{4}$	B
Plain.....	1	B
Plain.....	$1\frac{1}{4}$	B
Plain.....	$1\frac{1}{2}$	B
Plain.....	2 x $1\frac{1}{2}$	B
Plain.....	2	B
Plain.....	$2\frac{1}{2}$	B
..		



Fig. 654. 60° Y-Branch

	Size	Class
Plain.....	$1\frac{1}{2}$	B
Plain.....	2 x $1\frac{1}{2}$	B
Plain.....	2 x $1\frac{1}{2}$ x 2	B
Plain.....	2	B
Plain.....	$2\frac{1}{2}$	B

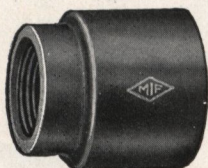
Fig. 653
Rod Coupling

Fig. 655. Plain

	Size	Class
Plain and Flat Band..	$\frac{1}{4}$ x $\frac{1}{8}$	A
Plain and Flat Band..	$\frac{3}{8}$ x $\frac{1}{8}$	A
Plain and Flat Band..	$\frac{3}{8}$ x $\frac{1}{4}$	B
Plain and Flat Band..	$\frac{1}{2}$ x $\frac{1}{8}$	A
Plain and Flat Band..	$\frac{1}{2}$ x $\frac{1}{4}$	B
Plain and Flat Band..	$\frac{1}{2}$ x $\frac{3}{8}$	B
Plain and Flat Band..	$\frac{3}{4}$ x $\frac{1}{4}$	B
Plain and Flat Band..	$\frac{3}{4}$ x $\frac{3}{8}$	B
Plain and Flat Band..	$\frac{3}{4}$ x $\frac{1}{2}$	B
Plain and Flat Band..	1 x $\frac{1}{4}$	B
Plain and Flat Band..	1 x $\frac{3}{8}$	B
Plain and Flat Band..	1 x $\frac{1}{2}$	B
Plain and Flat Band..	1 x $\frac{3}{4}$	B
Plain and Flat Band..	$1\frac{1}{4}$ x $\frac{1}{4}$	B
Plain and Flat Band..	$1\frac{1}{4}$ x $\frac{3}{8}$	B
Plain and Flat Band..	$1\frac{1}{4}$ x $\frac{1}{2}$	B
Plain and Flat Band..	$1\frac{1}{4}$ x $\frac{3}{4}$	C
Plain and Flat Band..	$1\frac{1}{4}$ x 1	C
Plain and Flat Band..	$1\frac{1}{2}$ x $\frac{1}{4}$	B
Plain and Flat Band..	$1\frac{1}{2}$ x $\frac{3}{8}$	B
Plain and Flat Band..	$1\frac{1}{2}$ x $\frac{1}{2}$	B
Plain and Flat Band..	$1\frac{1}{2}$ x $\frac{3}{4}$	C
Plain and Flat Band..	$1\frac{1}{2}$ x 1	C
Plain and Flat Band..	$1\frac{1}{2}$ x $1\frac{1}{4}$	C
Plain and Flat Band..	2 x $\frac{1}{4}$	B

Rod Couplings

Size.....	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$
Thread—Rod Size.....	14	12	12	11	10
Price, Black, each.....	.20	.20	.20	.20	.20
Price, Galvanized, each...	.40	.40	.40	.40	.40
Class for Pound Price....	A	A	B	B	B

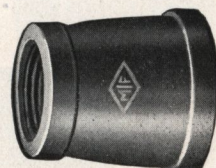
Reducing
Couplings

Fig. 656. Flat Band

	Size	Class
Plain and Flat Band..	2 x $\frac{3}{8}$	B
Plain and Flat Band..	2 x $\frac{1}{2}$	B
Plain and Flat Band..	2 x $\frac{3}{4}$	C
Plain and Flat Band..	2 x 1	C
Plain and Flat Band..	2 x $1\frac{1}{4}$	C
Plain and Flat Band..	2 x $1\frac{1}{2}$	C
Plain and Flat Band..	$2\frac{1}{2}$ x $\frac{3}{4}$	C
Plain and Flat Band..	$2\frac{1}{2}$ x 1	C
Plain and Flat Band..	$2\frac{1}{2}$ x $1\frac{1}{4}$	C
Plain and Flat Band..	$2\frac{1}{2}$ x $1\frac{1}{2}$	C
Plain and Flat Band..	$2\frac{1}{2}$ x 2	C
Plain and Flat Band..	3 x 1	C
Plain and Flat Band..	3 x $1\frac{1}{4}$	C
Plain and Flat Band..	3 x $1\frac{1}{2}$	C
Plain and Flat Band..	3 x 2	C
Plain and Flat Band..	3 x $2\frac{1}{2}$	C
Plain and Flat Band..	$3\frac{1}{2}$ x $1\frac{1}{2}$	C
Plain and Flat Band..	$3\frac{1}{2}$ x 2	C
Plain and Flat Band..	$3\frac{1}{2}$ x $2\frac{1}{2}$	C
Plain and Flat Band..	$3\frac{1}{2}$ x 3	C
Plain and Flat Band..	4 x 2	C
Plain and Flat Band..	4 x $2\frac{1}{2}$	C
Plain and Flat Band..	4 x 3	C
Plain and Flat Band..	4 x $3\frac{1}{2}$	C
Plain and Flat Band..	$4\frac{1}{2}$ x 4	C



Fig. 657. 90° Y-Branch

	Class	Size
Flat Band.....	$\frac{1}{2}$	B
Flat Band.....	$\frac{3}{4}$	B
Flat Band.....	1	B
Flat Band.....	$1\frac{1}{4}$	B
Flat Band.....	$1\frac{1}{2}$	B
Flat Band.....	2	B

Malleable Iron Fittings

Fig. 660
Eccentric Reducing Coupling

	Size	Class
Flat Band.....	1/2x 1/4	B
Flat Band.....	1/2x 3/8	B
Flat Band.....	3/4x 1/4	B
Flat Band.....	3/4x 3/8	B
Flat Band.....	3/4x 1/2	B
Flat Band.....	1 x 1/2	B
Flat Band.....	1 x 3/4	B
Flat Band.....	1 1/4x 3/8	B
Flat Band.....	1 1/4x 1/2	B
Flat Band.....	1 1/4x 3/4	C
Flat Band.....	1 1/4x1	C
Flat Band.....	1 1/2x 1/2	B
Flat Band.....	1 1/2x 3/4	C
Flat Band.....	1 1/2x1	C
Flat Band.....	1 1/2x1 1/4	C
Flat Band.....	2 x 1/2	B
Flat Band.....	2 x 3/4	C
Flat Band.....	2 x1	C
Flat Band.....	2 x1 1/4	C
Flat Band.....	2 x1 1/2	C



Fig. 665. Hexagon Coupling

	Size	Class
Plain.....	3/8	B
Plain.....	1/2	B
Plain.....	3/4	B
Plain.....	1	C
Plain.....	1 1/4	C
Plain.....	1 1/2	C
Plain.....	2	C
Plain.....	2 1/2	C

Fig. 661
Plain

	Size	Class
Plain.....	1/8	A
Plain and Flat Band..	1/4	B
Plain and Flat Band..	3/8	B
Plain and Flat Band..	1/2	B
Plain and Flat Band..	3/4	B
Plain and Flat Band..	1	C
Plain and Flat Band..	1 1/4	C
Plain and Flat Band..	1 1/2	C

Fig. 662
Flat Band

	Size	Class
Plain and Flat Band..	2	C
Plain and Flat Band..	2 1/2	C
Plain and Flat Band..	3	C
Plain and Flat Band..	3 1/2	C
Plain and Flat Band..	4	C
Plain and Flat Band..	4 1/2	C
Plain and Flat Band..	5	C
Plain and Flat Band..	6	C

Couplings—Right and Left

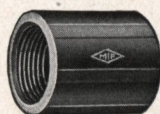


Fig. 663. Plain

	Size	Class
Plain.....	1/8	A
Plain and Flat Band..	1/4	B
Plain and Flat Band..	3/8	B
Plain and Flat Band..	1/2	B
Plain and Flat Band..	3/4	B
Plain and Flat Band..	1	C
Plain and Flat Band..	1 1/4	C



Fig. 664. Flat Band

	Size	Class
Plain and Flat Band..	1 1/2	C
Plain and Flat Band..	2	C
Plain and Flat Band..	2 1/2	C
Plain and Flat Band..	3	C
Plain and Flat Band..	3 1/2	C
Plain and Flat Band..	4	C

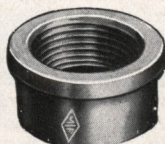


Fig. 666. Offset Reducing Coupling

This Fitting is the same as a Male and Female Reducer, except that the inlet and outlet are on the same level, so that by its use water pockets are prevented.

Size.....	1x3/4	1 1/4x1	1 1/2x1 1/4	2x1 1/2	2 1/2x2	3x2 1/2	3 1/2x3	4x3	4x3 1/2
Price, Black, ea.	.60	.70	.90	1.10	1.80	2.50	3.00	4.00	4.00

Malleable Caps

Fig. 667
Plain CapFig. 668
With Flat Band

	Size	Class		Size	Class
Plain and Flat Band..	1/8	A	Plain and Flat Band..	2	C
Plain and Flat Band..	1/4	B	Plain and Flat Band..	2 1/2	C
Plain and Flat Band..	3/8	B	Plain and Flat Band..	3	C
Plain and Flat Band..	1/2	B	Plain and Flat Band..	3 1/2	C
Plain and Flat Band..	3/4	B	Plain and Flat Band..	4	C
Plain and Flat Band..	1	B	Plain and Flat Band..	5	C
Plain and Flat Band..	1 1/4	C	Plain and Flat Band..	6	C
Plain and Flat Band..	1 1/2	C			

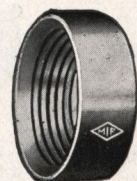
Malleable Iron Fittings

Fig. 670
Hexagonal LocknutFig. 671
Round Locknut

Hexagonal				Round			
Size	Class	Size	Class	Size	Class	Size	Class
$\frac{1}{8}$	A	$1\frac{1}{2}$	C	$\frac{1}{4}$	B	$1\frac{1}{2}$	C
$\frac{1}{4}$	B	2	C	$\frac{3}{8}$	B	2	C
$\frac{3}{8}$	B	$2\frac{1}{2}$	C	$\frac{1}{2}$	B	$2\frac{1}{2}$	C
$\frac{1}{2}$	B	3	C	$\frac{3}{4}$	B	3	C
$\frac{3}{4}$	B	$3\frac{1}{2}$	C	1	B	$3\frac{1}{2}$	C
1	B	4	C	$1\frac{1}{4}$	B	4	C
$1\frac{1}{4}$	B						

Faced Locknuts

Size	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Price, Black, each	.08	.09	.10	.12	.15	.20	.25	.30	.35	.45
Price, Galvanized, each	.11	.13	.15	.18	.22	.30	.35	.45	.50	.65

Fig. 672
Faced LocknutFig. 673
Plug

Plugs

Size	Class	Size	Class	Size	Class	Size	Class
$\frac{1}{8}$	A	$\frac{3}{4}$	B	2	C	4	C
$\frac{1}{4}$	B	1	B	$2\frac{1}{2}$	C	$4\frac{1}{2}$	C
$\frac{3}{8}$	B	$1\frac{1}{4}$	C	3	C	5	C
$\frac{1}{2}$	B	$1\frac{1}{2}$	C	$3\frac{1}{2}$	C	6	C

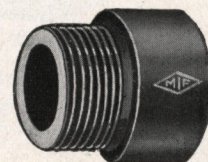
 $\frac{1}{8}$ inch to $\frac{1}{2}$ inch inclusive are not cored.

Extension Pieces

Fig. 674
Wall Bracket

Size	Class
$\frac{3}{8}$	B

	Size	Class		Size	Class
Plain	$\frac{3}{8} \times \frac{1}{4}$	B	Flat Band	$1\frac{1}{4} \times 1$	B
Plain	$\frac{1}{2}$	B	Plain	$1\frac{1}{4}$	B
Flat Band	$\frac{1}{2} \times \frac{3}{8}$	B	Flat Band	$1\frac{1}{2} \times \frac{3}{4}$	B
Plain	$\frac{1}{2}$	B	Flat Band	$1\frac{1}{2} \times 1$	B
Flat Band	$\frac{3}{4} \times \frac{3}{8}$	B	Flat Band	$1\frac{1}{2} \times 1\frac{1}{4}$	B
Flat Band	$\frac{3}{4} \times \frac{1}{2}$	B	Plain	$1\frac{1}{2}$	B
Plain	$\frac{3}{4}$	B	Flat Band	$2 \times \frac{3}{4}$	B
Flat Band	$1 \times \frac{1}{2}$	B	Flat Band	2×1	B
Flat Band	$1 \times \frac{3}{4}$	B	Flat Band	$2 \times 1\frac{1}{4}$	B
Plain	1	B	Flat Band	$2 \times 1\frac{1}{2}$	B
Flat Band	$1\frac{1}{4} \times \frac{3}{4}$	B	Plain	2	B

Fig. 675
Extension Piece

Drop Sockets

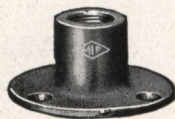


Fig. 676. Drop Socket

	Size	Class
Plain	$\frac{1}{4} \times \frac{1}{8}$	B
Plain	$\frac{1}{4}$	B
Plain	$\frac{3}{8} \times \frac{1}{8}$	B
Plain	$\frac{3}{8} \times \frac{1}{4}$	B
Plain	$\frac{3}{8}$	B
Plain	$\frac{1}{2} \times \frac{1}{8}$	B
Plain	$\frac{1}{2} \times \frac{1}{4}$	B
Plain	$\frac{1}{2} \times \frac{3}{8}$	B

	Size	Class
Plain	$\frac{1}{2}$	B
Plain	$\frac{3}{4} \times \frac{1}{8}$	B
Plain	$\frac{3}{4} \times \frac{1}{4}$	B
Plain	$\frac{3}{4} \times \frac{3}{8}$	B
Plain	$\frac{3}{4} \times \frac{1}{2}$	B
Plain	$\frac{3}{4}$	B
Plain	$1 \times \frac{1}{8}$	B
Plain	1	B



Fig. 677. Oval Waste Nut



Fig. 678. Round Waste Nut

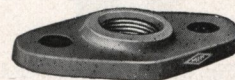


Fig. 679. Oval Flange

Oval

Size	Class	Size	Class
$\frac{1}{8}$	A	1	B
$\frac{1}{4}$	B	$1\frac{1}{4}$	B
$\frac{3}{8}$	B	$1\frac{1}{2}$	B
$\frac{1}{2}$	B	2	B
$\frac{3}{4}$	B		

Round

Size	Class	Size	Class
$\frac{1}{4}$	B	$\frac{1}{2}$	B
$\frac{3}{8}$	B		

Oval Flange

Size	Class	Size	Class
$\frac{1}{4}$	B	$1\frac{1}{4}$	B
$\frac{3}{8}$	B	$1\frac{1}{2}$	B
$\frac{1}{2}$	B	2	B
$\frac{3}{4}$	B	$2\frac{1}{2}$	B
1	B	3	B

Malleable Iron Fittings

Chandelier Hooks



Fig. 680

Male Hook

Size	Class
1/8	B
1/4	B
3/8	B
1/2	B



Fig. 681

Female Hook

Size	Class
1/8	B
1/4	B
3/8	B
1/2	B



Fig. 682

Male Loop

Size	Class
3/8	B
1/2	B

Malleable Iron Return Bends



Fig. 683

Open Pattern

Size	Center to Center	R. L. Class	R. H. Class
3/8	1 1/2	A	B
1/2	1 1/2	A	B
3/4	2	B	B
1	2 1/2	B	B
1 1/4	3	B	C
1 1/2	3 1/2	B	C
2	4	B	C
2	6	B	C

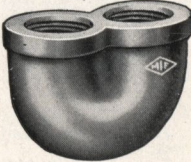


Fig. 684

Close Pattern

Size	Center to Center	R. L. Class	R. H. Class
3/8	7/8	A	B
1/2	1	A	B
3/4	1 1/4	B	B
1	1 1/2	B	B
1 1/4	1 3/4	B	C
1 1/2	2 1/8	B	C
2	2 5/8	B	C



Fig. 685

Medium Bend

Size	Center to Center	R. L. Class	R. H. Class
3/8	1 3/8	A	B
1/2	1 1/4	A	B
3/4	1 1/2	B	B
1	1 7/8	B	B
1 1/4	2 1/4	B	C
1 1/2	2 1/2	B	C
2	3	B	C

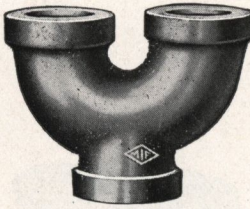


Fig. 686. Return Bend

Open Pattern		Back Outlet	
Size	Center to Center	R. L. Class	R. H. Class
Outlet			
1/2 x 1/2	1 1/2	A	B
3/4 x 3/4	2	B	B
1 x 1	2 1/2	B	B
1 1/4 x 1 1/4	3	B	C
1 1/2 x 1 1/2	3 1/2	B	C
2 x 3/4	4	B	C
2 x 2	4	B	C

Malleable Return Bends
Special Wide Pattern

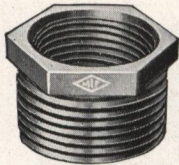
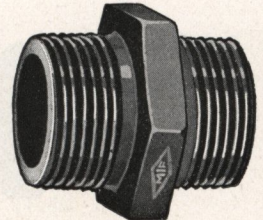


Fig. 687. Wide Pattern Malleable Return Bend

Return Bends, Special Wide Pattern, Right Hand

Size, inches	3/8	3/4	3/4	1	1 1/4	1 1/2
Price, each	.25	1.00	1.25	1.25	1.25	2.00
Price, Galvanized, each	.30	1.35	1.65	1.70	1.70	2.75
Center to Center, inches	1 1/2	4	6	6	6	6
Size, inches	2	3	3	4	6	....
Price, each	3.00	5.00	5.00	8.00	16.00	....
Price, Galvanized, each	4.00	6.50	6.50	....	....	....
Center to Center, inches	5	7 1/2	8	6	12	....

Malleable Iron Fittings

Fig. 692
Malleable BushingFig. 694
Malleable Faced BushingFig. 696
Malleable Short Nipple, Hexagon Center

Malleable Bushings, Fig. 692

Size.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6
Price, Black, each..	.04	.04	.04	.05	.06	.07	.09	.14	.21	.30	.40	.50	.75	.93	1.25
Price, Galv'd, each.	.08	.08	.08	.10	.12	.14	.18	.28	.42	.60	.80	1.00	1.50	1.85	2.50

List of Sizes

1/4 x 1/8	1 1/4 x 1/4	2 x 1	3 1/2 x 1 1/4	4 1/2 x 4
3/8 x 1/8	1 1/4 x 3/8	2 x 1 1/4	3 1/2 x 1 1/2	5 x 2
3/8 x 1/4	1 1/4 x 1/2	2 x 1 1/2	3 1/2 x 2	5 x 2 1/2
1/2 x 1/8	1 1/4 x 3/4	2 1/2 x 3/4	3 1/2 x 2 1/2	5 x 3
1/2 x 1/4	1 1/4 x 1	2 1/2 x 1	3 1/2 x 3	5 x 3 1/2
1/2 x 3/8	1 1/2 x 1/4	2 1/2 x 1 1/4	4 x 1	5 x 4
3/4 x 1/8	1 1/2 x 3/8	2 1/2 x 1 1/2	4 x 1 1/4	5 x 4 1/2
3/4 x 1/4	1 1/2 x 1/2	2 1/2 x 2	4 x 1 1/2	6 x 1 1/2
3/4 x 3/8	1 1/2 x 3/4	3 x 3/4	4 x 2	6 x 2
3/4 x 1/2	1 1/2 x 1	3 x 1	4 x 2 1/2	6 x 2 1/2
1 x 1/8	1 1/2 x 1 1/4	3 x 1 1/4	4 x 3	6 x 3
1 x 1/4	2 x 1/4	3 x 1 1/2	4 x 3 1/2	6 x 3 1/2
1 x 3/8	2 x 3/8	3 x 2	4 1/2 x 2 1/2	6 x 4
1 x 1/2	2 x 1/2	3 x 2 1/2	4 1/2 x 3	6 x 4 1/2
1 x 3/4	2 x 3/4	3 1/2 x 1	4 1/2 x 3 1/2	6 x 5

Malleable Faced Bushings, Fig. 694

Size.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6
Price, Black, each..	.08	.08	.09	.11	.13	.17	.22	.32	.48	.70	1.20	1.50	2.10	2.60	3.75
Price, Galv'd, each.	.12	.12	.14	.17	.20	.25	.33	.48	.72	1.05	1.80	2.25	3.15	3.90	5.63

List of Sizes

1/4 x 1/8	1 x 3/4	2 x 3/4	3 x 2	5 x 4
3/8 x 1/4	1 1/4 x 1/2	2 x 1	3 x 2 1/2	5 x 4 1/2
1/2 x 1/4	1 1/4 x 3/4	2 x 1 1/4	3 1/2 x 3	6 x 3
1/2 x 3/8	1 1/4 x 1	2 x 1 1/2	4 x 2	6 x 4
3/4 x 1/4	1 1/2 x 1/2	2 1/2 x 1	4 x 2 1/2	6 x 4 1/2
3/4 x 3/8	1 1/2 x 3/4	2 1/2 x 1 1/4	4 x 3	6 x 5
3/4 x 1/2	1 1/2 x 1	2 1/2 x 1 1/2	4 x 3 1/2	
1 x 3/8	1 1/2 x 1 1/4	2 1/2 x 2	4 1/2 x 4	
1 x 1/2	2 x 1/2	3 x 1 1/2	5 x 3	

Malleable Short Nipple, Hexagon Center, Fig. 696

Size.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Price, Black, Right Hand, each.....	.16	.16	.20	.20	.24	.32	.40	.56	.70	.95	1.15	2.10
Price, Black, Right and Left, each.....	.20	.20	.20	.25	.30	.40	.50	.70	1.10	1.50	1.90	2.40
Price, Galv'd, Right Hand, each.....	.32	.32	.40	.40	.48	.64	.80	1.12	1.40	1.90	2.30	4.20
Price, Galv'd, Right and Left, each.....	.40	.40	.40	.50	.60	.80	1.00	1.40	2.20	3.00	3.80	4.80

List of Sizes

1/4	3/4 x 3/8	1 x 3/4	1 1/4	1 1/2
3/8 x 1/4	3/4 x 1/2	1	1 1/2 x 3/8	2 x 1/2
3/8	3/4	1 1/4 x 3/8	1 1/2 x 1/2	2 x 3/4
1/2 x 1/4	1 x 1/4	1 1/4 x 1/2	1 1/2 x 3/4	2 x 1
1/2 x 3/8	1 x 3/8	1 1/4 x 3/4	1 1/2 x 1	2 x 1 1/4
1/2	1 x 1/2	1 1/4 x 1	1 1/2 x 1 1/4	2 x 1 1/2
3/4 x 1/4				2

Malleable Fittings

Malleable Union Elbows

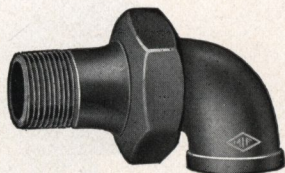


Fig. 700. Male and Female

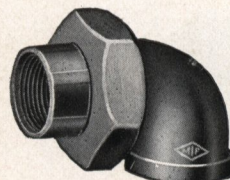


Fig. 701. Female

Size.....	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Price, with Female Union, Black, each.....	.42	.54	.63	.90	1.05	1.55	2.85
Price, with Female Union, Galvanized, each.....	.63	.81	.95	1.35	1.58	2.35	4.30
Price, with Male Union, Black, each.....	.48	.62	.72	1.05	1.20	1.80	3.30
Price, with Male Union, Galvanized, each.....	.72	.93	1.08	1.60	1.80	2.70	4.95

Malleable Union Tees

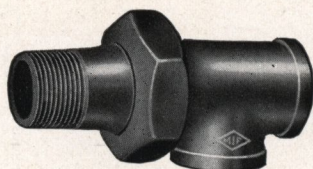


Fig. 702. Male and Female

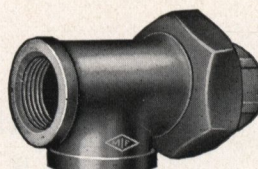


Fig. 703. Female

Size.....	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Price, with Female Union, Black, each.....	.45	.57	.70	.95	1.15	1.70	3.20
Price, with Female Union, Galvanized, each.....	.68	.86	1.05	1.45	1.75	2.55	4.80
Price, with Male Union, Black, each.....	.52	.65	.80	1.10	1.30	1.95	3.70
Price, with Male Union, Galvanized, each.....	.78	1.00	1.20	1.65	1.95	2.95	5.55



Fig. 704. Cross-over

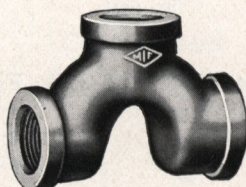


Fig. 705. Cross-over with Outlet



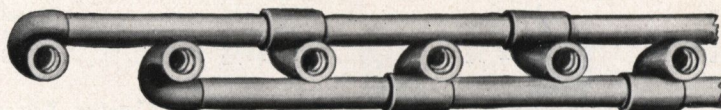
Fig. 706. Cross-over Tee

Size, inches....	1/2	3/4	1
Black, each....	.20	.30	.45
Galv'd, each....	.25	.40	.60

Size, inches....	1/2	3/4	1
Black, each....	.23	.38	.55
Galv'd, each....	.30	.50	.75

Size, inches....	1/2	3/4	1
Black, each....	.35	.50	.75
Galv'd, each....	.50	.70	1.00

Wash Tray Tees and Elbows



Showing Application

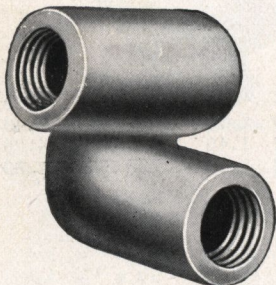


Fig. 707. Wash Tray Tee

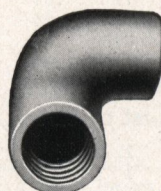


Fig. 708. Left Elbow

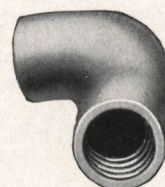


Fig. 709. Right Elbow

Size, inches.....	1/2	3/4
Galv'd, Regular....	.20	.30
Galv'd, extra long..	.30	.40

Size, inches.....	1/2	3/4
Each, Galv'd, Right or Left.....	.20	.30

Malleable Iron Clamps

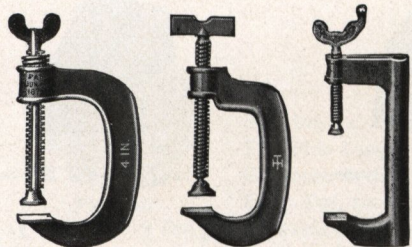


Fig. 710
*Adjustable

Fig. 711
Heavy Pattern
Screw

Fig. 712
Extra
Heavy

Fig. 710

Patent Adjustable	
3 in., per doz...	4.50
4 in., per doz...	6.50
5 in., per doz...	7.50
6 in., per doz...	9.00
8 in., per doz...	11.50
10 in., per doz...	14.00
12 in., per doz...	15.50

Fig. 711

Heavy Pattern Screw	
2 in., per doz...	2.25
3 in., per doz...	4.00
4 in., per doz...	6.00
5 in., per doz...	7.00
6 in., per doz...	8.75
8 in., per doz...	11.00
10 in., per doz...	13.50
12 in., per doz...	15.00

Fig. 712

Extra Heavy	
6 in., per doz...	11.00
8 in., per doz...	15.00
10 in., per doz...	16.00
12 in., per doz...	17.00

*Note: By turning the bolt one-quarter turn to the left, it can be moved its full length out or in; when turning it to the right it operates like any other screw.

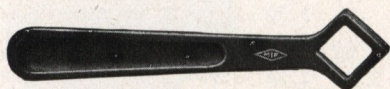


Fig. 713. Cock Wrench

Gas Cock Wrenches, Fig. 713



Fig. 714. Cock Wrench

This style carried in stock and furnished on orders, unless otherwise specified.

No.	0	1	2	2½	3	3½	4	4½	5	5½
Size of Nut.	8/32	11/32	13/32	15/32	17/32	19/32	21/32	23/32	25/32	27/32
No.	6	6½	7	7½	8	8½	9	10	11	12
Size of Nut.	26/32	28/32	30/32	1 1/32	1 3/32	1 5/32	1 7/32	1 9/32	1 11/32	1 13/32

Nut Square with Handle, Fig. 714

No.	1	2	3	3½	4	4½	5	5½	6
Size of Nut.	11/32	13/32	15/32	17/32	19/32	21/32	23/32	25/32	27/32
No.	6½	7	7½	8	8½	9	10	11	12
Size of Nut.	28/32	30/32	1 1/32	1 3/32	1 5/32	1 7/32	1 9/32	1 11/32	1 13/32

Prices quoted on application.

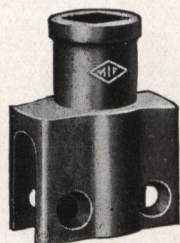


Fig. 715. Clamp
for Square Rod

Hydrant Clamps

Size of Cock.	1/2	5/8	3/4	1
Fig. 715, Price for 3/8, 7/16, or 1/2 square rod, per pound	.15	.15	.15	.15
Fig. 716, Price for 3/8 pipe, per pound	.18	.18	.18	.18
Fig. 716, Price for 1/2 pipe, per pound	.20	.20	.20	.20

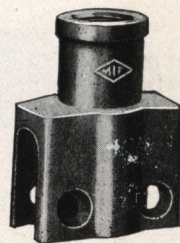


Fig. 716. Clamp
for Iron Pipe

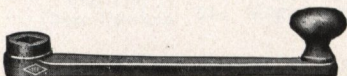


Fig. 717. Handle

Hydrant Handles

Fig. 717, Price for 3/8 sq. rod., per lb...	.15
Fig. 718, Price for 3/8 pipe, per lb.....	.20



Fig. 718. Handle

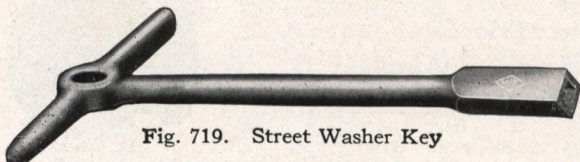
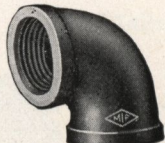


Fig. 719. Street Washer Key

Street Washer Keys

Price for 3/8 and 1/2 pipe, per pound.....	.15
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Malleable Fittings—Piece Price List

Fig. 720
Plain ElbowFig. 721
Flat Band ElbowFig. 722
Plain 45° ElbowFig. 723
Flat Band 45° Elbow

Malleable Fittings—Piece Price List

Size, inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2
Elbows, 90°, Right Hand, each	.06	.07	.08	.10	.15	.22	.25	.35
Right and Left, each		.09	.11	.13	.17	.25	.30	.40
Galvanized, Right Hand, each	.08	.09	.11	.14	.20	.32	.40	.60
Elbows, 45°, each		.08	.10	.12	.18	.26	.36	.54
Galvanized, each		.12	.15	.20	.25	.40	.50	.85

Size, inches	2	2 1/2	3	3 1/2	4	5	6
Elbows, 90°, Right Hand, each	.50	.90	1.50	2.25	3.00	4.00	6.50
Right and Left, each	.65						
Galvanized, Right Hand, each	.90	1.50	2.60	3.75	5.00	6.50	10.00
Elbows, 45°, each	.82	1.25	2.50	3.25	4.50	6.00	7.50
Galvanized, each	.135	1.90	3.75	4.75	6.75	9.00	11.00

Malleable Street Elbows and Tees

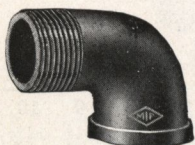


Fig. 724. Flat Band Street Elbow



Fig. 725. Flat Band 45° Street Elbow

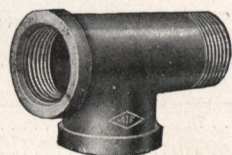
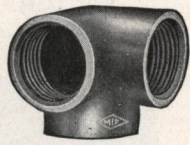
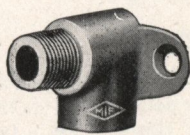
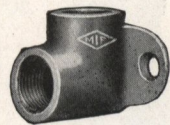


Fig. 726. Flat Band Street Tee

Street Elbows and Tees—Piece Price List

Size, inches	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Elbows, 90°, each	.10	.10	.12	.20	.25	.40	.55	.90	1.50	2.25
Galvanized, each	.12	.12	.15	.28	.35	.55	.80	1.30	2.25	3.50
Elbows, 45°, each			.12	.20	.25	.40	.55	.90	...	...
Galvanized, each			.15	.28	.35	.55	.80	1.30	...	...
Tees, each		.12	.15	.25	.35	.50	.75	1.15	2.00	2.50
Galvanized, each		.15	.20	.35	.50	.70	1.10	1.65	2.75	3.50

Malleable Side Outlet and Drop Elbows

Fig. 727
Elbow, Side OutletFig. 727A
Drop Elbow, M. & FFig. 728
Long Drop ElbowFig. 729
Female Drop Elbow

Side Outlet and Drop Elbows—Piece Price List

Size, inches	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Elbow, Side Outlet, each		.08	.10	.18	.30	.45	.60	1.00
Galvanized, each		.10	.15	.25	.45	.65	.90	1.50
Elbow, Female Drop, each	.06	.08	.12	.20	.25	...	...	...
Elbow, Female Drop, Galvanized, each		.12	.20	.35	.40	...	...	...

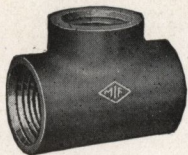
Drop Elbows

Size, inches	1/8x3/8	1/4x3/8	3/8x3/8	1/2x3/8
Male and Female, each	.08	.08	.08	.12
Male and Female, Galvanized, each	.12	.12	.12	.20
Male and Female, Long Drop, each	...	...	.10	...
Male and Female, Long Drop, Galv'd, each	...	...	.18	...

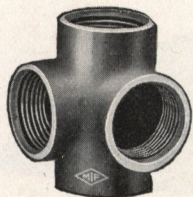
Malleable Tees—Piece Price List

Size, inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2
Black, each	.07	.08	.09	.11	.15	.25	.30	.45
Galvanized, each	.09	.10	.13	.16	.20	.38	.50	.70

Size, inches	2	2 1/2	3	3 1/2	4	5	6
Black, each	.60	1.05	1.70	2.50	3.40	5.00	7.75
Galvanized, each	1.00	1.90	3.00	4.25	5.75	8.00	12.00

Fig. 729A
Plain TeeFig. 729B
Flat Band Tee

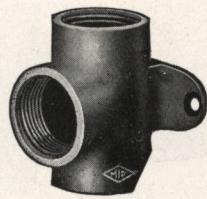
Malleable Fittings—Piece Price List

Fig. 730
Side Outlet Tee

Side Outlet Tees. Drop Tees

Piece Price List

Size, inches.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Tee, Side Outlet, each....	.12	.14	.20	.35	.50	.80	1.25
Galvanized, each.....	.17	.20	.28	.50	.70	1.10	1.75
Drop Tee, each.....	.10	.14	.22	.30	...	...	...
Galvanized, each.....	.15	.25	.40	.55	...	...	...

Fig. 731
Female Drop Tee

Crosses—Plain and Banded

Malleable Crosses

Piece Price List

Size, inches.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$
Crosses, each.....	.09	.10	.16	.20	.30	.40	.60
Galvanized, each....	.12	.14	.25	.29	.45	.60	.90
Size, inches.....	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	5	6
Crosses, each.....	1.00	1.75	3.00	3.25	5.25	7.50	13.00
Galvanized each..	1.50	2.75	4.50	5.00	8.00	...	...

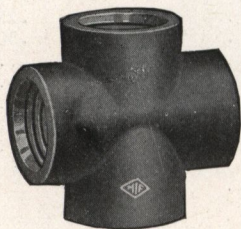


Fig. 732. Plain Cross



Fig. 733. Flat Band

Malleable Couplings and Caps



Fig. 734. Coupling

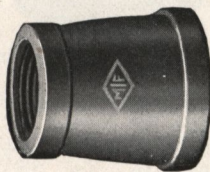


Fig. 735. Red. Coupling

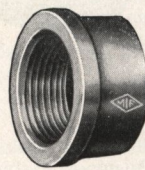
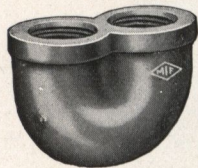


Fig. 736. Cap

Couplings and Caps

Piece Price List

Size, inches.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Couplings, Right Hand, each....	.03	.03	.05	.07	.10	.14	.20	.25	.35	...	...	...	...
Galvanized, each.....	...	.05	.07	.10	.17	.23	.30	.40	.55	...	...	...	...
Couplings, Right and Left, each..	...	.04	.06	.08	.12	.16	.25	.36	.52	.70	1.00	...	...
Galvanized, each.....	...	.06	.09	.10	.17	.25	.35	.55	.75	1.05	1.50	...	...
Couplings, Reducing, each.....	...	.05	.06	.07	.10	.16	.20	.28	.45	.70	1.00	1.50	1.85
Galvanized, each.....	...	.08	.10	.10	.15	.25	.35	.45	.75	1.05	1.65	2.40	3.05
Caps, Black, each.....	...	.03	.04	.05	.08	.12	.16	.24	.32	.45	.85	1.00	1.20
Galvanized, each.....	...	.04	.05	.08	.12	.17	.24	.38	.52	.76	1.30	1.60	2.00

Fig. 737
Close Pattern

Malleable Return Bends—Close Pattern

Piece Price List

Size, inches.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Centers, inches.....	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	$2\frac{3}{16}$	$2\frac{5}{8}$
Right Hand, Plain, each.....	.18	.25	.35	.50	.75	1.00
Right Hand, Galvanized, each.....	.25	.35	.55	.75	1.15	1.65
Right and Left, Plain, each.....	.23	.30	.45	.60	.90	1.25
Right and Left, Galvanized, each.....	...	.40	.65	...	...	...

Open Pattern

Size, inches.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Centers, inches.....	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5
Right Hand, Plain, each....	.20	.30	.50	.65	.85	1.25	2.00	3.00
Right Hand, Galv'd, each...	.28	.45	.70	.90	1.25	2.00	3.50	5.00
Right and Left, Plain, each..	.25	.38	.60	.80	1.05	1.55	2.50	3.75
Right and Left, Galv'd, each..	...	.55	.80	...	...	...	...	...

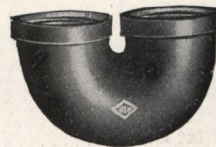
Malleable Y-Branched, Straight and Reducing

Piece Price List

Size, inches.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	4
Plain, each.....	.40	.50	.60	.80	1.00	1.70	2.00	4.00	5.50
Galvanized, each.....	.60	.75	.90	1.25	1.50	2.50	3.00	6.00	8.25



Fig. 738. Y-Branch

Fig. 739
Open Pattern

Malleable Fittings—Piece Price List



Fig. 740
Oval Waste Nut



Fig. 741
Round Waste Nut

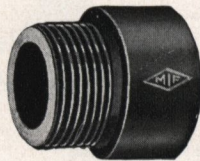


Fig. 742
Extension Piece



Fig. 743
Wall Plate

Malleable Fittings—Piece Price List

Size, inches	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2
Oval Waste Nut, Plain, each	.04	.05	.06	.08	.10	.15	.25
Oval Waste Nut, Galvanized, each	.08	.10	.12	.16	.20	.30	.50
Round Waste Nut, Plain, each	.04	.05	...	...	...	...	...
Round Waste Nut, Galvanized, each	.08	.10	...	...	...	...	...
Extension Piece, Plain, each	...	.06	.09	.12	.16	...	...
Extension Piece, Galvanized, each	...	.09	.13	.18	.24	...	...
Wall Plate, each	...	.12	.16	.30	...	...	...

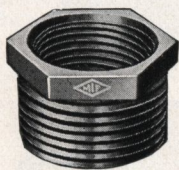


Fig. 744. Bushing



Fig. 745. Faced Bushing



Fig. 746. Locknut

Malleable Fittings—Piece Price List

Size, inches	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6
Bushings, Plain, each	.04	.04	.04	.05	.06	.07	.09	.14	.21	...	...	...	...	...	...
Bushings, Galvanized, each	.08	.08	.08	.10	.12	.14	.18	.28	.42	...	...	...	...	...	...
Faced Bushings, Plain, each	...	.08	.09	.11	.13	.17	.22	.32	.48	.70	1.20	1.50	2.10	2.60	3.75
Faced Bushings, Galvanized, each	...	...	...	...	.20	.25	.33	.48	.72	1.05	1.80	2.25	...	...	...
Locknuts, Plain, each	.02	.03	.04	.05	.07	.09	.11	.18	...	...	...	...	...	...	...
Locknuts, Galvanized, each	.03	.04	.05	.07	.10	.14	.20	.30	...	...	...	...	...	...	...

Malleable Elbows—Extra Long Sweep



Fig. 747
Female Malleable Elbow



Fig. 748
Male and Female Malleable Elbow



Fig. 749
Male Thread Malleable Elbow

Size	Radius	Face to Center	Size	Radius	Face to Center	Size	Radius	Face to Center
Flat Band	3/8	7/8	1 1/2	3/8	7/8	1 1/2	3/8	7/8
Flat Band	1/2	1 1/8	1 7/8	1/2	1 1/8	1 7/8	1/2	1 1/8
Flat Band	3/4	1 5/8	2 1/4	3/4	1 5/8	2 1/4	3/4	1 5/8
Flat Band	1	1 7/8	2 5/8	1	1 7/8	2 5/8	1	1 7/8
Flat Band	1 1/4	2 1/4	3 1/2	1 1/4	2 1/4	3 1/2	1 1/4	2 1/4
Flat Band	1 1/2	2 3/4	4 3/8	1 1/2	2 3/4	4 3/8	1 1/2	2 3/4
Flat Band	2	3 1/4	5 1/4	2	3 1/4	5 1/4	2	3 1/4
Flat Band	2 1/2	4 1/8	6 5/8	2 1/2	4 1/8	6 5/8	2 1/2	4 1/8
Flat Band	3	5 1/4	8	3	5 1/4	8	3	5 1/4
Flat Band	3 1/2	6 1/8	9 3/8	3 1/2	6 1/8	9 3/8	3 1/2	6 1/8
Flat Band	4	7 1/8	10 3/4	4	7 1/8	10 3/4	4	7 1/8

Made to order only, and quoted on specifications.

Malleable Railing Fittings



Fig. 750. Elbow



Fig. 751. Tee

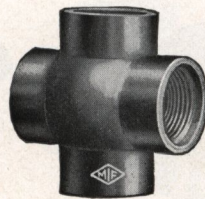


Fig. 752. Cross



Fig. 753. Elbow, Side Outlet

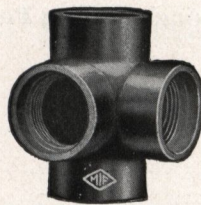


Fig. 754. Tee, Side Outlet

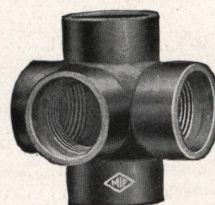


Fig. 755. Cross, Side Outlet

Malleable Railing Fittings—Black

Size, inches.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Elbows, each.....	.15	.18	.20	.35	.45	.72	1.60	2.25
Elbows, Side Outlet, each.....	.20	.23	.25	.40	.50	.80	1.75	2.50
Tees, each.....	.20	.23	.25	.40	.50	.75	1.75	2.50
Tees, Side Outlet, each.....	.30	.33	.35	.45	.55	.90	1.90	2.60
Crosses, each.....	.30	.33	.35	.45	.58	1.00	1.80	2.60
Crosses, Side Outlet, each.....	.35	.38	.40	.50	.65	1.35	2.00	2.75
Railing Bushings, each.....	...	.06	.07	.10	.12	.18	.28	.40

Galvanized Fittings double the above lists.

Malleable Railing Fittings

Reducing—Black

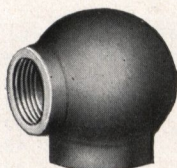


Fig. 756. Reducing Elbow



Fig. 757. Reducing Side Outlet Elbow

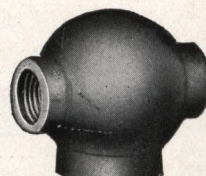


Fig. 758. Tee, Reducing on Run

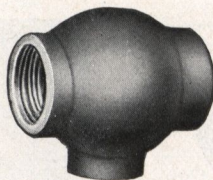


Fig. 759. Tee, reducing on Outlet

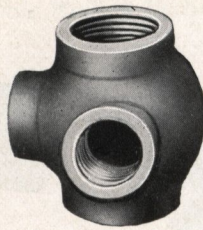


Fig. 759A. Side Outlet Tee, reducing on Outlets

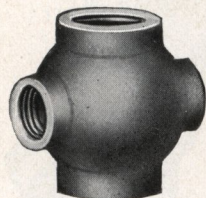


Fig. 759B. Reducing Cross

Reducing Malleable Railing Fittings—Black

Size, inches.....	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Elbows, Reducing, each.....	.25	.44	.56	.90	1.80	2.70
Elbows, Reducing, Side Outlet, each.....	.31	.50	.62	1.00	1.90	2.80
Tees, Reducing, Fig. 758-759, each.....	.31	.50	.62	1.00	2.00	2.60
Tees, Reducing, Fig. 759A, each.....	.44	.56	.70	1.12	2.20	2.75
Crosses, Reducing, each.....	.44	.56	.75	1.25	2.20	2.75

Galvanized Fittings double above lists. List of sizes of Reducing Fittings, page 80.

In ordering describe fittings wanted and give size and figure number. Railing Fittings will always be furnished with all openings tapped Right Hand unless otherwise specified. Fittings tapped otherwise will be charged at special prices, and will be subject to factory delays.

In ordering Reducing Railing Fittings, or Right and Left Fittings, it is advisable to send sketch showing which openings are wanted reduced, and which Right and which Left.

45° Angle Malleable Railing Fittings



Fig. 760. Elbow



Fig. 761. S. O. Elbow

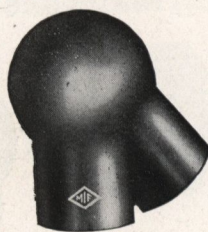


Fig. 762. Elbow



Fig. 763. S. O. Elbow

45° Angle Railing Fittings

Size, inches	1	1 1/4	1 1/2	2	2 1/2	3
Fig. 760. Black, each	.40	.70	.90	1.44	2.00	3.00
Fig. 760. Galvanized, each	.60	1.05	1.35	2.16	3.00	6.00
Fig. 761. Black, each	.50	.80	1.00	1.60	2.30	3.40
Fig. 761. Galvanized, each	1.00	1.60	2.00	3.20	4.60	6.80
Fig. 762. Black, each	.40	.70	.90	1.44	2.00	3.00
Fig. 762. Galvanized, each	.60	1.05	1.35	2.16	3.00	6.00
Fig. 763. Black, each	.50	.80	1.00	1.60	2.30	3.40
Fig. 763. Galvanized, each	.75	1.20	1.50	2.40	3.60	6.80

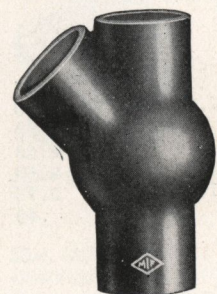


Fig. 764. Tee



Fig. 765. S. O. Tee

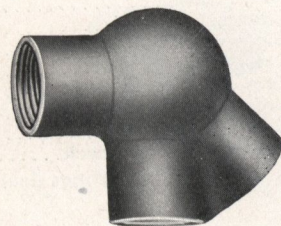


Fig. 766. Landing Tee

45° Angle Railing Fittings

Size, inches	1	1 1/4	1 1/2	2	2 1/2	3
Fig. 764. Black, each	.50	.80	1.00	1.60	2.40	3.80
Fig. 764. Galvanized, each	.75	1.20	1.50	2.40	3.60	7.60
Fig. 765. Black, each	.70	.90	1.10	1.80	2.80	4.30
Fig. 765. Galvanized, each	1.05	1.35	1.65	2.70	4.20	8.60
Fig. 766. Black, each	.50	.80	1.00	1.60	2.40	....
Fig. 766. Galvanized, each	.75	1.20	1.50	2.40	3.60	....

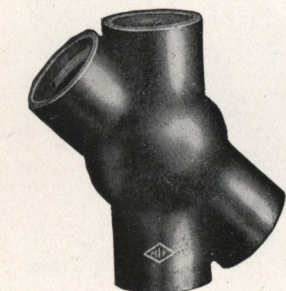


Fig. 767. Cross

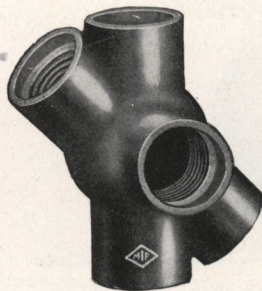


Fig. 768. S. O. Cross

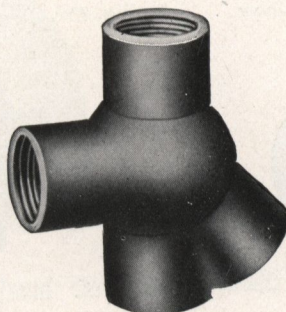


Fig. 769. Landing Cross

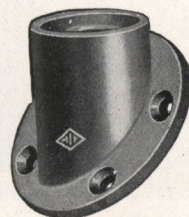


Fig. 769A. Flange

45° Angle Railing Fittings

Size, inches	1	1 1/4	1 1/2	2	2 1/2	3
Fig. 767. Black, each	.70	.90	1.10	1.80	2.80	4.50
Fig. 767. Galvanized, each	1.05	1.35	1.65	2.70	4.20	9.00
Fig. 768. Black, each	.80	1.00	1.30	2.70	3.50	5.20
Fig. 768. Galvanized, each	1.60	2.00	2.60	5.40	7.00	11.40
Fig. 769. Black, each	.70	.90	1.10	1.80	2.80	....
Fig. 769. Galvanized, each	1.05	1.35	1.65	2.70	4.20	....
Fig. 769A. Black, each	.30	.40	.56	.60	1.00	1.50
Fig. 769A. Galvanized, each	.60	.80	1.12	1.20	2.00	3.00

These Fittings can be furnished in polished brass on special orders. Right and Left and Reducing Fittings, add 25 per cent.

Malleable 45° Railing Fittings

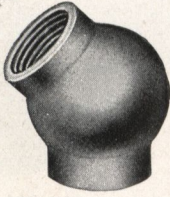


Fig. 771. 45° Elbow

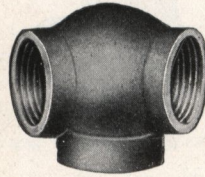


Fig. 772. 45° Tee

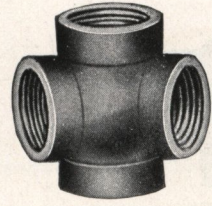


Fig. 773. 45° Cross

Malleable 45° Railing Fittings—Black

Size, inches	1	1¼	1½	2	2½	3
Elbows, 45°, each	.30	.45	.55	.90	2.15	2.90
Tees, 45°, each	.40	.5	.60	.95	2.50	3.00
Crosses, 45°, each	.45	.55	.70	1.15	2.20	2.75

Galvanized Fittings double above lists.

Adjustable Railing Fittings

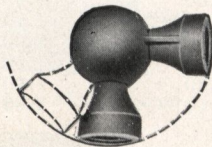


Fig. 774. Elbow

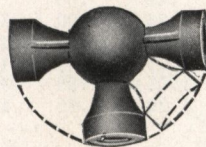


Fig. 775. Tee

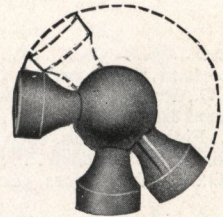


Fig. 776. Tee

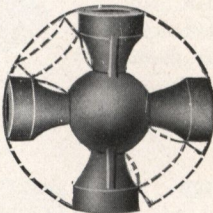


Fig. 777. Cross

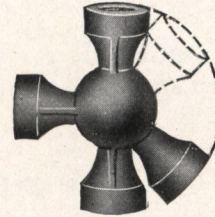


Fig. 778. Cross

Adjustable Railing Fittings—Black

Size, inches	1	1¼	1½	2
Fig. 774. Adjustable Elbow, each	1.10	1.25	1.70	2.25
Fig. 774A. With Side Outlet, each	1.65	1.85	2.55	3.35
Fig. 775. Adjustable Tee, each	1.30	1.50	2.00	2.50
Fig. 775A. With Side Outlet, each	1.85	2.10	2.85	3.60
Fig. 776. Adjustable Tee, each	1.30	1.60	2.15	2.50
Fig. 776A. With Side Outlet, each	1.85	2.20	3.00	3.60
Fig. 777. Adjustable Cross, each	1.50	1.75	2.35	2.75
Fig. 778. Adjustable Cross, each	1.50	1.85	2.50	2.75
Fig. 778A. With Side Outlet, each	2.05	2.45	3.35	3.85

Note: Side Outlet Fittings are not illustrated. Galvanized Fittings double above lists.

Adjustable Railing Fittings—Polished Brass

Size, inches	1	1¼	1½	2
Fig. 774. Elbow, each	2.75	3.15	4.25	5.65
Fig. 775. Tee, each	3.25	3.75	5.00	6.25
Fig. 776. Tee, each	3.25	4.00	5.40	6.25
Fig. 777. Cross, each	3.75	4.40	5.90	6.90
Fig. 778. Cross, each	3.75	4.65	6.25	6.90

With the use of the Adjustable Railing Fittings above illustrated, almost any angle may be obtained in railings for stairs or other places requiring a deviation from horizontal or perpendicular lines which would otherwise require special patterns to attain the same results.

Polished Brass Railing Fittings

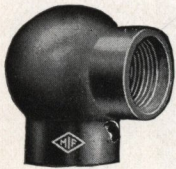


Fig. 780. Elbow

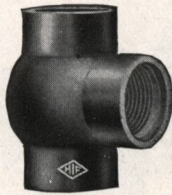


Fig. 781. Tee

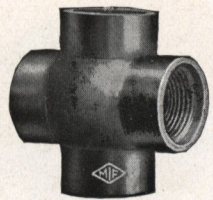


Fig. 782. Cross



Fig. 783. S. O. Elbow

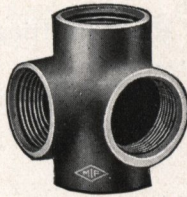


Fig. 784. S. O. Tee

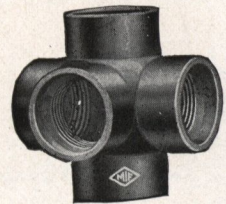


Fig. 785. S. O. Cross

Polished Brass Railing Fittings

Size, inches	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Elbow, Polished Brass, each	.40	.60	.80	1.20	1.60	2.20	4.00	7.00
Elbow, S. O., Polished Brass, each	.75	1.00	1.45	1.65	2.05	2.90	6.00	8.50
Tee, Polished Brass, each	.60	.85	1.10	1.70	2.00	2.75	6.00	8.50
Tee, S. O., Polished Brass, each	1.05	1.25	1.50	2.00	2.30	3.25	7.00	10.00
Cross, Polished Brass, each	1.05	1.25	1.50	2.00	2.40	3.25	7.00	10.00
Cross, S. O., Polished Brass, each	1.20	1.45	1.70	2.12	2.60	3.50	8.00	11.50

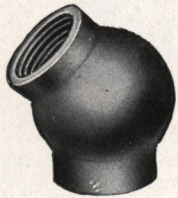


Fig. 786. Elbow, 45°

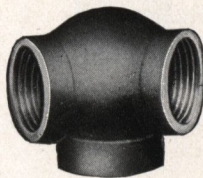


Fig. 787. Tee, 45°

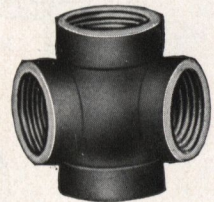


Fig. 788. Cross, 45°

Polished Brass 45° Railing Fittings

Size, inches	1	1 1/4	1 1/2	2	2 1/2	3
Elbows, Polished Brass, each	1.50	1.70	2.15	3.00	8.00	14.00
Tees, Polished Brass, each	1.55	2.05	2.40	3.35	....	....
Crosses, Polished Brass, each	1.60	2.20	2.60	3.40	....	....

Polished Brass Reducing Railing Fittings

Size, inches	1	1 1/4	1 1/2	2
Elbow, Reducing, each	1.00	1.50	2.00	2.75
Elbow, S. O., Reducing, each	1.80	2.06	2.55	3.62
Tee, Reducing on Run, each	1.37	2.12	2.50	3.45
Tee, Reducing at Side, each	1.37	2.12	2.50	3.45
Tee, S. O., Reducing, 3 outlets, each	1.87	2.50	2.87	4.05
Tee, S. O., Reducing, 2 outlets	1.87	2.50	2.87	4.05
Cross, Reducing, each	1.87	2.50	3.00	4.05

Polished Brass Floor Flange

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Diameter	2 3/4	3 3/8	4	4	4 3/8	4 7/8	6	7
Each	.70	.80	.90	1.00	1.50	2.00	4.00	6.00

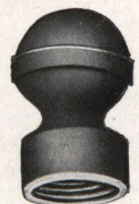
Polished Brass Acorns

Female Thread								
Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Each	.40	.65	.80	.90	1.20	2.50	5.00	7.00
Male Thread								
Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Each	.40	.65	.80	.90	1.20	2.50	5.00	7.00

Nickel-plated Rail Fittings to order at special prices.



Fig. 789. Nason Globe Pattern Polished Brass Floor Flange

Fig. 789A
Female
Acorn

Round Iron Floor Flanges—Drilled

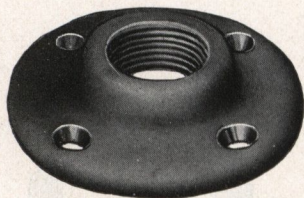


Fig. 790. Floor Flange

Stock Sizes

Size, inches.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/4	1 1/2	2	2 1/2
Diameter, inches..	2 1/2	3	3	3 1/2	4	4	5	5	6	6
Black, each.....	.10	.10	.10	.15	.16	.16	.30	.30	.42	.42
Galvanized, each..	.20	.20	.20	.30	.32	.32	.60	.60	.84	.84

Railing Flanges in various other diameters can be furnished from factory.

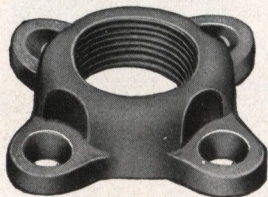


Fig. 791. Floor Flange

Square Railing Flanges—Drilled

Size, inches.....	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Black, each.....	.14	.15	.15	.20	.28	.30	.50	.75
Galvanized, each.....	.28	.30	.30	.40	.56	.60	1.00	1.50



Fig. 792. Floor Flange

Globe Pattern Floor Flange—Drilled

Size, inches.....	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Black, each.....	.16	.18	.20	.40	.50	.90	1.35	2.50
Galvanized, each.....	.32	.36	.40	.80	1.00	1.80	2.70	5.00

Fig. 793
Light Pattern Floor Flange

Light Railing Flanges or Floor Flanges—Malleable

Size, inches.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	1	1	1	1	$1\frac{1}{4}$
Diameter, inches.....	3	3	$3\frac{1}{2}$	4	3	$3\frac{1}{2}$	4	5	$3\frac{1}{2}$	4	5	6	4
Black, each.....	.13	.14	.17	.19	.17	.18	.20	.22	.20	.22	.24	.26	.25

Size, inches.....	$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{1}{2}$	2	2	2	$2\frac{1}{2}$	$2\frac{1}{2}$	3	3	$3\frac{1}{2}$
Diameter, inches.....	5	6	5	6	5	6	7	7	$7\frac{1}{2}$	7	$7\frac{1}{2}$	$7\frac{1}{2}$
Black, each.....	.35	.40	.36	.42	.45	.55	.65	.70	.80	.85	.90	1.00

Galvanized Fittings, double above lists, can be made with or without screw holes.



Fig. 794. Oval Flange

Oval Flanges

Size, inches.....	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Black, each.....	.14	.18	.22	.24	.31	.44	.50
Galvanized, each.....	.28	.36	.44	.48	.62	.88	1.00

Railing Acorn Ornaments



Fig. 795. Male

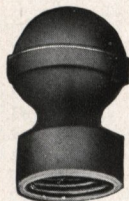


Fig. 796. Female

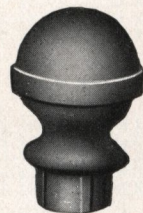


Fig. 797. To Drive

Size, inches.....	3/4	1	1 1/4	1 1/2	2	2 1/2
Male, Female, Drive, Black, each.....	.15	.20	.25	.35	.90	1.00

Galvanized Acorns, double above lists. Larger size to 4-inch to order.

Fig. 798
Bushing

Railing Bushings

Size, inches.....	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Black, each.....	.06	.07	.10	.12	.18	.28	.40
Galvanized, each.....	.12	.14	.20	.24	.36	.56	.80

Railing Fixtures

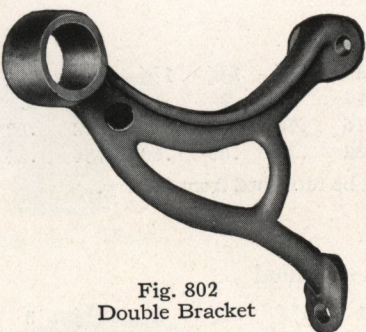
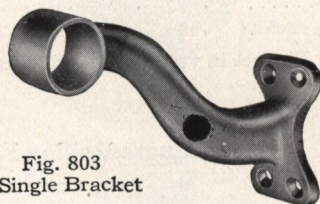
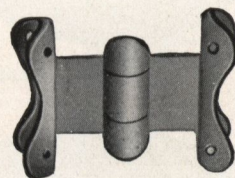
Fig. 802
Double BracketFig. 803
Single Bracket

Fig. 804. Hinge

Size, inches.	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Double Bracket, Black, each	.40	.60	.70	.80	1.00	1.25
Double Bracket, Galvanized, each	.65	.80	1.10	1.30	1.60	2.00
Single Bracket, Black, each	.35	.50	.60	.70	.90	1.15
Single Bracket, Galvanized, each	.55	.80	.95	1.10	1.45	1.85
Gate Hinges, each	...	...	.50	.70	1.00	1.25

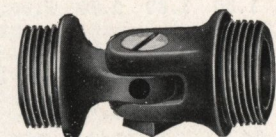


Fig. 805. Hinge

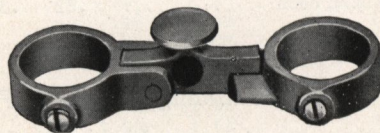


Fig. 806. Latch



Fig. 807. Latch

Size, inches.	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Gate Hinge, Black, each	.35	.40	.45	.55	.80	1.00
Gate Hinge, Galvanized, each	.49	.56	.63	.77	1.12	1.40
Latch, Fig. 806, Black, each	.25	.30	.35	.40	.45	.50
Latch, Fig. 806, Galvanized, each	.35	.42	.49	.56	.63	.70
Latch, Fig. 807, each	...	...	.70	.80	.90	1.00



Fig. 808. Plug

Foot Rail Plug
To Drive

Size, inches.	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Black, each	.15	.15	.20	.25	.30	.40
Galvanized, each	.30	.30	.40	.50	.60	.80

List of Reducing Sizes of Railing Fittings

Elbows	Side Outlet Elbows	Tees	Side Outlet Tees	Crosses	Bushings
1 x $\frac{1}{2}$	1 x $\frac{1}{2}$ x $\frac{1}{2}$	$\frac{1}{2}$ x $\frac{3}{4}$	1 x1 x $\frac{1}{2}$ x $\frac{1}{2}$	1 x1 x $\frac{1}{2}$ x $\frac{1}{2}$	$\frac{3}{4}$ x $\frac{1}{2}$
1 x $\frac{3}{4}$	1 x $\frac{3}{4}$ x $\frac{3}{4}$	$\frac{1}{2}$ x1	1 x1 x $\frac{3}{4}$ x $\frac{3}{4}$	1 x1 x $\frac{3}{4}$ x $\frac{3}{4}$	1 x $\frac{1}{2}$
$1\frac{1}{4}$ x $\frac{3}{4}$	1 x1 x $\frac{1}{2}$	$\frac{3}{4}$ x1	$1\frac{1}{4}$ x1 $\frac{1}{4}$ x $\frac{3}{4}$ x $\frac{3}{4}$	$1\frac{1}{4}$ x1 $\frac{1}{4}$ x $\frac{3}{4}$ x $\frac{3}{4}$	1 x $\frac{3}{4}$
$1\frac{1}{4}$ x1	1 x1 x $\frac{3}{4}$	$\frac{3}{4}$ x1 $\frac{1}{4}$	$1\frac{1}{4}$ x1 $\frac{1}{4}$ x1	$1\frac{1}{4}$ x1 $\frac{1}{4}$ x1	$1\frac{1}{4}$ x $\frac{3}{4}$
$1\frac{1}{2}$ x1	$1\frac{1}{4}$ x $\frac{3}{4}$ x $\frac{3}{4}$	1 x1 x $\frac{3}{4}$	$1\frac{1}{2}$ x1 $\frac{1}{2}$ x1	$1\frac{1}{2}$ x1 $\frac{1}{2}$ x1	$1\frac{1}{4}$ x1
$1\frac{1}{2}$ x $1\frac{1}{4}$	$1\frac{1}{4}$ x1 x1	1 x1 x1 $\frac{1}{4}$	$1\frac{1}{2}$ x1 $\frac{1}{2}$ x1 $\frac{1}{4}$ x1 $\frac{1}{4}$	$1\frac{1}{2}$ x1 $\frac{1}{2}$ x1 $\frac{1}{4}$ x1 $\frac{1}{4}$	$1\frac{1}{2}$ x1
2 x $1\frac{1}{4}$	$1\frac{1}{4}$ x $1\frac{1}{4}$ x $\frac{3}{4}$	1 x1 x1 $\frac{1}{2}$	2 x2 x1 $\frac{1}{4}$ x1 $\frac{1}{4}$	2 x2 x1 $\frac{1}{4}$ x1 $\frac{1}{4}$	$1\frac{1}{2}$ x $1\frac{1}{4}$
2 x $1\frac{1}{2}$	$1\frac{1}{4}$ x $1\frac{1}{4}$ x1	$1\frac{1}{4}$ x $1\frac{1}{4}$ x $\frac{3}{4}$	2 x2 x1 $\frac{1}{2}$ x1 $\frac{1}{2}$	2 x2 x1 $\frac{1}{2}$ x1 $\frac{1}{2}$	2 x $1\frac{1}{4}$
$2\frac{1}{2}$ x2	$1\frac{1}{2}$ x1 x1	$1\frac{1}{4}$ x $1\frac{1}{4}$ x1	$2\frac{1}{2}$ x $2\frac{1}{2}$ x1 $\frac{1}{2}$ x1 $\frac{1}{2}$	$2\frac{1}{2}$ x $2\frac{1}{2}$ x1 $\frac{1}{2}$ x1 $\frac{1}{2}$	2 x $1\frac{1}{2}$
3 x2	$1\frac{1}{2}$ x $1\frac{1}{4}$ x $1\frac{1}{4}$	$1\frac{1}{4}$ x $1\frac{1}{4}$ x2	$2\frac{1}{2}$ x $2\frac{1}{2}$ x2	$2\frac{1}{2}$ x $2\frac{1}{2}$ x2	$2\frac{1}{2}$ x $1\frac{1}{2}$
3 x $2\frac{1}{2}$	$1\frac{1}{2}$ x $1\frac{1}{2}$ x1	$1\frac{1}{4}$ x $1\frac{1}{4}$ x1	3 x3 x2 x2	3 x3 x2 x2	$2\frac{1}{2}$ x2
	$1\frac{1}{2}$ x $1\frac{1}{2}$ x $1\frac{1}{4}$	$1\frac{1}{2}$ x $1\frac{1}{2}$ x1	3 x3 x $2\frac{1}{2}$ x $2\frac{1}{2}$	3 x3 x $2\frac{1}{2}$ x $2\frac{1}{2}$	3 x2
	2 x $1\frac{1}{4}$ x $1\frac{1}{4}$	$1\frac{1}{2}$ x $1\frac{1}{2}$ x $1\frac{1}{4}$			3 x $2\frac{1}{2}$
	2 x $1\frac{1}{2}$ x $1\frac{1}{2}$	$1\frac{1}{2}$ x $1\frac{1}{2}$ x2			
	2 x2 x $1\frac{1}{4}$	2 x2 x $1\frac{1}{4}$			
	2 x2 x $1\frac{1}{2}$	2 x2 x $1\frac{1}{2}$			
	$2\frac{1}{2}$ x $2\frac{1}{2}$ x $1\frac{1}{2}$	$2\frac{1}{2}$ x $1\frac{1}{2}$			
	$2\frac{1}{2}$ x $2\frac{1}{2}$ x2	$2\frac{1}{2}$ x2			
	3 x3 x2	3 x2			
	3 x3 x $2\frac{1}{2}$	3 x $2\frac{1}{2}$			

Brass Fittings

For Steam Working Pressure up to 125 Pounds

Iron Pipe Sizes—Beaded



Fig. 812. Brass Elbow

Brass Elbows

Size, inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Rough, each	.12	.15	.20	.28	.40	.63	.90	1.20	2.00	3.50	6.00	8.00	10.00
Rough Tinned, each	.22	.25	.33	.43	.60	.93	1.25	1.60	2.60	4.30	7.50	10.00	12.50
Finished, each	.30	.35	.45	.56	.75	1.10	1.55	2.00	3.00	5.50	9.00	14.00	17.50
Finished and Nickel-plated, each	.36	.42	.53	.65	.87	1.25	1.75	2.25	3.35	6.15	10.00	16.00	20.00
Finished and Tinned, each	.40	.45	.58	.71	.95	1.40	1.90	2.40	3.60	6.30	10.50	16.00	20.00

Brass Elbows, Side Outlet

Size, inches	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Rough, each	.45	.60	.85	1.20	1.90	2.75	3.60	6.00	10.50	18.00
Rough Tinned, each	.57	.75	1.05	1.45	2.25	3.20	4.10	6.75	11.50	19.85
Finished, each	1.05	1.35	1.70	2.25	3.30	4.70	6.00	9.00	16.50	27.00
Finished and Nickel-plated, each	1.25	1.60	2.00	2.60	3.75	5.35	6.80	10.00	18.50	30.00
Finished and Tinned, each	1.17	1.50	1.90	2.50	3.65	5.15	6.50	9.75	17.50	28.85

Brass Elbows, Reducing

Size, inches	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Rough, each	.19	.25	.35	.50	.80	1.10	1.50	2.50	4.25	7.50	10.00	12.50
Rough Tinned, each	.29	.38	.50	.70	1.10	1.45	1.90	3.10	5.00	9.00	12.00	15.00
Finished, each	.44	.55	.70	.95	1.40	1.90	2.50	3.75	6.75	11.25	17.50	22.00
Finished and Nickel-plated, each	.52	.65	.82	1.10	1.60	2.15	2.85	4.15	7.60	12.50	20.00	25.00
Finished and Tinned, each	.54	.68	.85	1.15	1.70	2.25	2.90	4.35	7.55	12.75	19.50	24.50

Brass 45° Elbows

Size, inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Rough, each	.16	.20	.25	.31	.40	.63	.90	1.20	2.00	3.50	6.00	8.00	10.00
Rough Tinned, each	.26	.30	.38	.46	.60	.93	1.25	1.60	2.60	4.30	7.50	10.00	12.50
Finished, each	.38	.45	.55	.66	.85	1.23	1.70	2.20	3.25	6.00	9.75	15.50	19.50
Finished and Nickel-plated, each	.45	.53	.65	.78	1.00	1.43	1.95	2.55	3.65	6.85	11.00	18.00	22.50
Finished and Tinned, each	.48	.55	.68	.81	1.05	1.53	2.05	2.60	3.85	6.80	11.25	17.50	22.00

Right and Left Elbows, add 25 per cent.

Brass Street Elbows

Size, inches	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Rough, each	.25	.27	.33	.48	.63	.85	1.50	2.00
Rough Tinned, each	.35	.37	.46	.63	.83	1.15	1.85	2.40
Finished, each	.47	.52	.63	.83	1.08	1.45	2.30	3.00
Finished and Nickel-plated, each	.54	.60	.73	.95	1.23	1.65	2.55	3.35
Finished and Tinned, each	.57	.62	.76	.98	1.28	1.75	2.65	3.40

Brass Drop Elbows

Size, inches	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Rough, each	.35	.45	.65	1.05	1.50	2.00	3.40
Rough Tinned, each	.50	.65	.90	1.40	1.95	2.50	4.15
Finished, each	.85	1.05	1.40	2.00	2.80	3.60	5.40
Finished and Nickel-plated, each	1.00	1.25	1.65	2.30	3.20	4.10	6.00
Finished and Tinned, each	1.00	1.25	1.65	2.35	3.25	4.10	6.15

Brass Tees

Size, inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Rough, each	.17	.21	.28	.40	.55	.85	1.25	1.70	2.80	5.00	8.50	11.00	14.00
Rough Tinned, each	.29	.33	.43	.60	.80	1.20	1.70	2.20	3.55	6.00	10.35	13.50	17.00
Finished, each	.42	.49	.63	.80	1.05	1.50	2.15	2.80	4.20	7.75	12.75	19.50	24.50
Finished and Nickel-plated, each	.50	.58	.75	.93	1.22	1.70	2.45	3.15	4.65	8.65	14.00	22.30	28.00
Finished and Tinned, each	.54	.61	.78	1.00	1.30	1.85	2.60	3.30	4.95	8.75	14.60	22.00	27.50

Brass Tees, Reducing

Size, inches	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Rough, each	.25	.35	.50	.70	1.05	1.55	2.10	3.50	6.25	10.50	14.00	17.50
Rough Tinned, each	.37	.50	.70	.95	1.40	2.00	2.60	4.25	7.25	12.35	16.50	20.50
Finished, each	.60	.77	1.00	1.30	1.85	2.65	3.50	5.25	9.75	15.80	24.50	30.50
Finished and Nickel-plated, each	.72	.90	1.15	1.50	2.10	3.00	3.95	5.85	10.90	17.50	28.00	35.00
Finished and Tinned, each	.72	.92	1.20	1.55	2.20	3.10	4.00	6.00	10.75	17.65	27.00	33.50

Brass Tees, Bullhead

Size, inches	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Rough, each	.25	.38	.50	.63	.95	1.25	1.65	2.20	5.00	6.90	11.25	16.25
Rough Tinned, each	.36	.53	.68	.86	1.20	1.50	2.05	2.75	5.75	7.90	12.75	18.25
Finished, each	.50	.76	1.00	1.25	1.90	2.50	3.30	4.40	10.00	13.80	22.50	32.50
Finished and Nickel-plated	.62	.92	1.18	1.43	2.13	2.75	3.55	4.65	10.30	14.15	23.10	33.30

Brass Tees, Side Outlet

Size, inches	1/2	3/4	1	1 1/4	1 1/2	2
Rough, each	1.20	1.65	2.50	3.75	5.00	8.50
Rough Tinned, each	1.45	1.95	2.95	4.30	5.60	9.40
Finished, each	2.05	2.70	3.90	5.70	7.40	11.50
Finished and Nickel-plated, each	2.35	3.05	4.35	6.35	8.20	12.50
Finished and Tinned, each	2.30	3.00	4.35	6.25	8.00	12.50

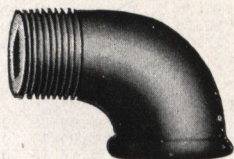


Fig. 814. Brass Street Elbow



Fig. 815. Brass Drop Elbow

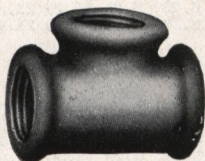


Fig. 816. Brass Tee

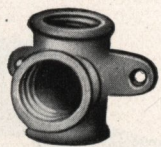


Fig. 820. Brass Drop Tee

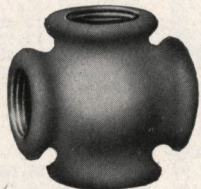


Fig. 821. Brass Cross



Fig. 822. Brass Y-Branch

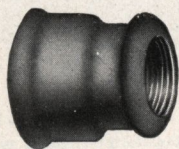


Fig. 823. Brass Reducer

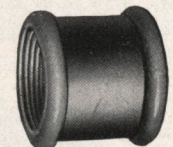


Fig. 824. Brass Coupling

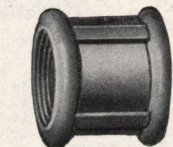


Fig. 825. Brass Right and Left Coupling

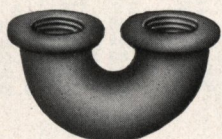


Fig. 826. Brass Return Bend, Open



Fig. 827. Brass Return Bend, Close

Brass Fittings

For Steam Working Pressures up to 125 Pounds

Iron Pipe Sizes—Beaded

Brass Drop Tees, Single Ear

Size, Inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Rough, each	.43	.57	.80	1.25	1.85	2.50	4.20
Rough Tinned, each	.63	.82	1.10	1.70	2.40	3.10	5.10
Finished, each	1.13	1.37	1.80	2.55	3.65	4.70	7.00
Finished and Nickel-plated, each	1.33	1.62	2.15	2.95	4.25	5.45	7.90
Finished and Tinned, each	1.33	1.62	2.10	3.00	4.20	5.30	7.90

Brass Drop Tees, Double Ear

Size, inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Rough, each	.58	.74	1.05	1.70	2.45	3.30	5.60
Rough Tinned, each	.78	1.00	1.35	2.15	3.00	3.90	6.50
Finished, each	1.28	1.54	2.05	3.00	4.25	5.50	8.40
Finished and Nickel-plated, each	1.48	1.80	2.40	3.40	4.85	6.25	9.30
Finished and Tinned, each	1.48	1.79	2.35	3.45	4.80	6.10	9.30

Brass Crosses

Size, inches	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Rough, each	.25	.30	.40	.55	.80	1.25	1.80	2.40	4.00	7.00	12.00	16.00	20.00
Rough Tinned, each	.40	.45	.60	.80	1.10	1.70	2.35	3.00	4.90	8.20	14.25	19.00	23.75
Finished, each	.60	.70	.90	1.10	1.50	2.20	3.10	4.00	6.00	11.00	18.00	28.00	35.00
Finished and Nickel-plated, each	.72	.84	1.05	1.30	1.75	2.50	3.50	4.50	6.70	12.30	20.00	32.00	40.00
Finished and Tinned, each	.75	.85	1.10	1.35	1.80	2.65	3.65	4.60	6.90	12.20	20.25	31.00	38.75

Brass Crosses, Reducing

Size, inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Rough, each	.38	.50	.70	1.00	1.55	2.25	3.00	5.00	8.75	15.00	20.00	25.00
Rough Tinned, each	.53	.70	.95	1.30	2.00	2.80	3.60	5.90	10.00	17.25	23.00	28.75
Finished, each	.88	1.10	1.40	1.85	2.75	3.85	5.00	7.50	13.75	22.50	35.00	44.00
Finished and Nickel-plated, each	1.05	1.30	1.65	2.15	3.15	4.35	5.70	8.30	15.40	25.00	40.00	50.00
Finished and Tinned, each	1.03	1.30	1.65	2.15	3.20	4.40	5.60	8.40	14.95	24.75	38.00	47.75

Brass Y-Branches

Size, inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Rough, each	.60	.75	1.10	1.65	2.50	3.30	5.50	9.50	16.00	21.00	26.00
Rough Tinned, each	.85	1.05	1.50	2.25	3.20	4.10	6.70	11.00	19.00	25.00	31.00
Finished, each	1.35	1.60	2.15	3.05	4.45	5.70	8.50	15.50	25.00	33.00	41.00
Finished and Nickel-plated, each	1.60	1.90	2.50	3.50	5.10	6.50	9.50	17.50	28.00	37.00	46.00
Finished and Tinned, each	1.60	1.90	2.55	3.65	5.15	6.50	9.70	17.00	28.00	37.00	46.00

Brass Reducers

Size inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Rough each	.15	.20	.28	.40	.60	.90	1.10	1.75	2.75	4.00	6.00	8.00
Rough Tinned, each	.25	.33	.43	.60	.90	1.25	1.50	2.35	3.55	5.50	8.00	10.50
Finished, each	.35	.45	.56	.75	1.05	1.55	1.90	2.75	4.75	7.00	12.00	15.50
Finished and Nickel-plated, each	.42	.53	.65	.87	1.20	1.75	2.15	3.10	5.40	8.00	14.00	18.00
Finished and Tinned, each	.45	.58	.71	.95	1.35	1.90	2.30	3.35	5.55	8.50	14.00	18.00

Reducers reducing more than 2 sizes add 25 per cent. to List.

Brass Couplings—Right Hand

Size, inches	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Rough, each	.10	.13	.17	.25	.37	.55	.80	1.00	1.60	2.50	3.50	5.25	7.00
Rough Tinned, each	.20	.23	.30	.40	.57	.85	1.15	1.40	2.20	3.30	5.00	7.25	9.50
Finished, each	.24	.28	.36	.46	.63	.90	1.30	1.60	2.35	4.00	5.75	9.75	12.50
Finished and Nickel-plated, each	.29	.33	.42	.53	.72	1.00	1.45	1.80	2.60	4.50	6.50	11.25	14.25
Finished and Tinned, each	.34	.38	.49	.61	.83	1.20	1.65	2.00	2.95	4.80	7.25	11.75	15.00

Brass Couplings—Right and Left

Size, inches	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Rough, each	.13	.17	.22	.30	.45	.70	1.00	1.30	2.00	3.10	4.50
Rough Tinned, each	.23	.27	.35	.45	.65	1.00	1.35	1.70	2.60	3.90	6.00
Finished, each	.31	.37	.47	.58	.80	1.15	1.65	2.10	3.00	5.10	7.50
Finished and Nickel-plated, each	.37	.44	.55	.67	.92	1.30	1.85	2.35	3.35	5.75	8.50
Finished and Tinned, each	.41	.47	.60	.73	1.00	1.45	2.00	2.50	3.60	5.90	9.00

Brass Return Bends, Open

Size, inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Rough, each	.50	.60	.80	1.10	1.40	2.15	3.00	4.75	8.25	11.00
Rough Tinned, each	.85	1.10	1.50	2.00	2.85	3.80	5.95	9.85	14.00	
Finished, each	1.35	1.65	2.15	2.80	4.10	5.40	7.75	14.25	20.00	
Finished and Nickel-plated, each	1.60	1.95	2.50	3.25	4.75	6.20	8.75	16.25	23.00	
Finished and Tinned, each	1.60	1.95	2.55	3.40	4.80	6.20	8.95	15.85	23.00	

Brass Return Bends, Close

Size, inches	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Rough, each	.30	.40	.55	.70	1.00	1.25	1.80	2.50	4.25	7.00	10.00
Rough Tinned, each	.80	1.00	1.40	1.85	2.50	3.30	4.90	7.25	13.00	19.00	
Finished, each	1.30	1.55	2.05	2.65	3.75	4.90	7.00	10.00	15.00	22.00	
Finished and Nickel-plated, each	1.55	1.85	2.40	3.10	4.40	5.70	8.25	15.00	22.00		
Finished and Tinned, each	1.55	1.85	2.45	3.25	4.45	5.70	8.45	14.60	22.00		

Right and Left Return Bends, add 25 per cent. Centers same as Cast Iron Return Bends.

Brass Fittings

For Steam Working Pressures up to 125 Pounds

Iron Pipe Sizes—Beaded

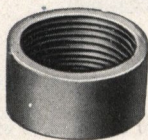


Fig. 832. Brass Cap

Brass Caps

Size, inches.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Rough, each.....	.10	.13	.16	.20	.30	.42	.60	.80	1.25	2.50	3.50	5.50	7.00
Rough Tinned, each.....	.15	.18	.22	.28	.40	.57	.80	1.00	1.55	2.90	4.25	6.50	8.25
Finished, each.....	.20	.25	.31	.40	.55	.77	1.10	1.50	2.25	4.00	5.50	8.00	10.00
Finished and Nickel-plated, each.....	.23	.29	.36	.47	.63	.89	1.25	1.75	2.60	4.50	6.15	8.85	11.00
Finished and Tinned, each.....	.25	.30	.37	.48	.65	.92	1.30	1.70	2.55	4.40	6.25	9.00	11.25



Fig. 833. Brass Locknut

Brass Locknuts

Size, inches.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Rough, each.....	.10	.10	.12	.15	.20	.28	.40	.55	.80	1.75	2.75	4.00	5.00
Rough Tinned, each.....	.15	.15	.18	.23	.30	.43	.60	.75	1.10	2.15	3.50	5.00	6.25
Finished, each.....	.24	.25	.32	.40	.50	.65	.85	1.10	1.60	3.25	4.75	6.50	8.00
Finished and Nickel-plated, each.....	.29	.30	.39	.48	.60	.77	1.00	1.30	1.85	3.75	5.40	7.35	9.00
Finished and Tinned, each.....	.29	.30	.38	.48	.60	.80	1.05	1.30	1.90	3.65	5.50	7.50	9.25

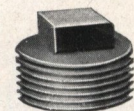


Fig. 834. Brass Plug

Brass Regular Plugs

Size, inches.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Rough, each.....	.08	.10	.12	.15	.20	.30	.45	.60	.95	1.50	2.25	3.75	5.00
Rough Tinned, each.....	.13	.15	.18	.23	.30	.45	.63	.80	1.25	1.90	3.00	4.75	6.25
Finished, each.....	.23	.30	.37	.43	.55	.75	1.00	1.30	1.95	3.00	4.25	6.25	8.00
Finished and Nickel-plated, each.....	.28	.37	.45	.52	.67	.90	1.20	1.55	2.30	3.50	4.90	7.10	9.00
Finished and Tinned, each.....	.28	.35	.43	.51	.65	.90	1.18	1.50	2.25	3.40	5.00	7.25	9.25

Fig. 835
Countersunk Plug

Brass Countersunk Plugs

Size, inches.....	$\frac{1}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Rough, each.....	.22	.30	.45	.65	.90	1.40	2.25	3.40	5.60	7.50
Rough Tinned, each.....	.30	.40	.60	.85	1.10	1.70	....	....	....	....
Finished, each.....	.42	.55	.80	1.15	1.55	2.25	....	....	....	....
Finished and Nickel-plated, each.....	.49	.63	.92	1.30	1.75	2.55	....	....	....	....
Finished and Tinned, each.....	.50	.65	.95	1.35	1.75	2.55	....	....	....	....



Fig. 836. Brass Bushing

Brass Solid Plugs

Size, inches.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Rough, each.....	.18	.22	.30	.45	.80	1.20	1.90	3.00	4.50	7.50	10.00
Rough Tinned, each.....	.24	.30	.40	.60	1.00	1.40	2.20	3.40	5.25	8.50	11.25
Finished, each.....	.43	.50	.65	.90	1.35	1.90	2.90	4.50	6.50	10.00	13.00
Finished and Nickel-plated, each.....	.51	.59	.77	1.05	1.55	2.15	3.25	5.00	7.15	10.85	14.00
Finished and Tinned, each.....	.49	.58	.75	1.05	1.55	2.10	3.20	4.90	7.25	11.00	14.25

Brass Bushings

Size, each.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Rough, each.....	.10	.12	.15	.22	.35	.50	.70	1.00	1.50	2.50	3.75	5.00
Rough Tinned, each.....	.15	.18	.23	.32	.50	.68	.90	1.30	1.90	3.25	4.75	6.25
Finished, each.....	.22	.27	.35	.47	.70	1.00	1.40	2.00	3.00	4.50	6.25	8.00
Finished and Nickel-plated, each.....	.26	.32	.42	.55	.82	1.15	1.65	2.35	3.50	5.15	7.10	9.00
Finished and Tinned, each.....	.27	.33	.43	.57	.85	1.18	1.60	2.30	3.40	5.25	7.25	9.25

Fig. 837
Brass Faced Bushing

Brass Faced Bushings

Size, inches.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Rough, each.....	.12	.15	.19	.27	.44	.62	.87	1.25	1.85	3.10	4.75	6.25

Bushings reducing more than 2 sizes add 25 per cent. to list.

Extra Heavy Rough Brass Fittings

For Steam Working Pressures up to 250 Pounds

Cast Iron Pattern

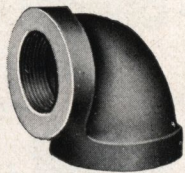


Fig. 842. Brass Elbow

Brass Elbows—Right

Size, inches.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6
Rough, each.....	.33	.45	.65	1.00	1.50	2.25	3.00	4.50	8.00	11.25	16.00	22.00	27.00	35.00	45.00
Rough Tinned, each.....	.48	.65	.90	1.30	1.95	2.75	3.65	5.40	9.50	13.25	18.75	25.50	31.50	41.00	52.50
Polished, each.....	.73	.95	1.25	1.75	2.50	3.50	4.50	6.25	10.50	14.75	23.50	31.00	38.00	48.00	60.00

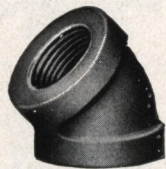


Fig. 843. 45° Elbow

Brass Elbows—Right and Left

Size, inches.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6
Rough, each.....	.40	.55	.75	1.20	1.80	2.60	3.50	5.25	9.00	13.00	19.00	25.00	30.00	40.00	50.00
Rough Tinned, each.....	.55	.75	1.00	1.50	2.25	3.10	4.15	6.15	10.50	15.00	21.75	28.50	34.50	46.00	57.50
Polished, each.....	.90	1.15	1.50	2.10	3.00	4.10	5.35	7.50	12.00	17.25	24.00	30.00	37.50	48.00	60.00

Brass Elbows—Reducing

Size, inches.....	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6
Rough, each.....	.55	.75	1.20	1.80	2.60	3.50	5.25	9.00	13.00	19.00	25.00	30.00	40.00	50.00
Rough Tinned, each.....	.75	1.00	1.50	2.25	3.10	4.15	6.15	10.50	15.00	21.75	28.50	34.50	46.00	57.50
Polished, each.....	1.15	1.50	2.10	3.00	4.10	5.35	7.50	12.00	17.25	24.00	30.00	37.50	48.00	60.00

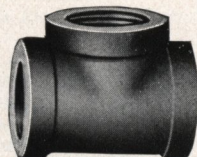


Fig. 844. Tee

Brass Elbows, 45°

Size, inches.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6
Rough, each.....	.45	.55	.75	1.10	1.65	2.50	3.25	4.50	8.00	11.25	16.00	22.00	27.00	35.00	45.00
Rough Tinned, each.....	.60	.75	1.00	1.40	2.10	3.00	3.90	5.40	9.50	13.25	18.75	25.50	31.50	41.00	52.50
Polished, each.....	.95	1.15	1.50	2.00	2.85	4.00	5.10	6.75	11.00	15.50	25.00	33.00	40.75	51.00	65.00

Brass Tees

Size, inches.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6
Rough, each.....	.45	.60	.90	1.35	2.00	3.00	4.00	6.00	10.75	15.00	22.00	30.00	36.00	46.00	60.00
Rough Tinned, each.....	.65	.85	1.25	1.75	2.60	3.70	4.85	7.25	12.75	17.75	26.00	34.50	42.00	54.00	70.00
Polished, each.....	1.00	1.25	1.70	2.35	3.35	4.65	6.00	8.35	14.00	19.75	32.00	42.00	51.00	64.00	80.00

Brass Tees—Reducing

Size, inches.....	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6
Rough, each.....	.70	1.05	1.55	2.30	3.50	4.50	6.75	12.00	17.00	25.00	35.00	40.00	51.00	66.00
Rough Tinned, each.....	.95	1.40	1.95	2.90	4.20	5.35	8.00	14.00	19.75	29.00	39.50	46.00	59.00	76.00
Polished, each.....	1.50	2.05	2.80	4.00	5.50	7.00	9.75	16.00	23.00	37.00	50.00	58.00	70.00	90.00

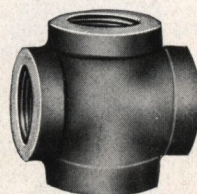


Fig. 846. Cross

Brass Crosses

Size, inches.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6
Rough, each.....	.70	.90	1.30	2.00	3.00	4.50	6.00	9.00	16.00	22.50	28.00	37.00	45.00	60.00	75.00
Rough Tinned, each.....	.95	1.25	1.75	2.50	3.75	5.35	7.00	10.50	18.25	25.75	33.00	43.00	52.00	70.00	87.50
Polished, each.....	1.50	1.90	2.50	3.50	5.00	7.00	9.00	12.50	21.00	29.50	43.00	55.00	67.00	85.00	105.00

Brass Crosses—Reducing

Size, inches.....	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6
Rough, each.....	1.10	1.50	2.40	3.60	5.25	7.00	10.50	18.00	26.00	32.00	42.00	50.00	66.00	82.00
Rough Tinned, each.....	1.45	1.95	2.90	4.35	6.10	8.00	12.00	20.25	29.25	37.00	48.00	57.00	76.00	94.50
Polished, each.....	2.35	3.00	4.25	6.00	8.25	10.75	15.00	24.00	35.00	50.00	64.00	75.00	95.00	120.00

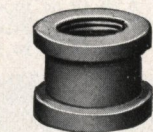


Fig. 848. Coupling

Brass Couplings

Size, inches.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6
Rough, each.....	.40	.50	.70	1.10	1.65	2.25	3.00	4.50	7.00	10.00	13.00	17.00	21.00	27.00	35.00
Rough Tinned, each.....	.50	.65	.90	1.35	2.00	2.65	3.50	5.25	8.00	11.50	15.00	19.50	24.00	31.00	40.00
Polished, each.....	.75	.90	1.15	1.70	2.40	3.20	4.15	5.85	9.00	13.00	18.50	24.00	29.00	37.00	47.00

Brass Y-Branches

Size, inches.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6
Rough, each.....	.90	1.10	1.50	2.50	3.50	5.50	7.25	11.00	19.00	27.00	33.00	45.00	55.00	70.00	90.00
Rough Tinned, each.....	1.20	1.50	2.00	3.10	4.35	6.50	8.50	12.75	21.75	31.00	38.00	52.00	64.00	82.00	105.00
Polished, each.....	1.70	2.10	2.70	4.00	5.50	8.00	10.25	14.50	24.00	34.00	48.00	63.00	77.00	96.00	120.00

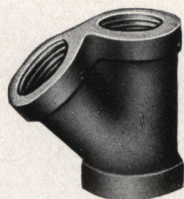


Fig. 849. Y-Branch

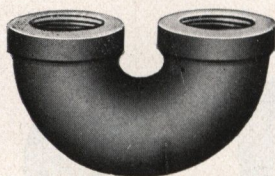


Fig. 851. Open

Extra Heavy Rough Brass Fittings

For Steam Working Pressures up to 250 Pounds

Cast Iron Pattern



Fig. 852. Close

Brass Return Bends

Brass Return Bends—Open

Size, inches.....	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Rough, each.....	1.80	2.75	4.00	5.50	8.00	11.00	18.00	25.00	35.00	45.00
Rough Tinned, each.....	2.30	3.35	4.90	6.50	9.25	12.75	20.75	29.00	41.00	52.00
Polished, each.....	3.00	4.25	6.00	8.00	11.00	14.50	23.00	32.00	50.00	63.00

Centers same as Cast Iron Return Bends.

Brass Return Bends—Close

Size, inches.....	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Rough, each.....	1.65	2.50	3.50	5.00	7.00	10.00	16.00	22.00	30.00	40.00
Rough Tinned, each.....	2.15	3.10	4.40	6.00	8.25	11.75	18.75	26.00	36.00	47.00
Polished, each.....	2.85	4.00	5.50	7.50	10.00	13.50	21.00	29.00	45.00	58.00

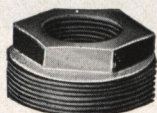


Fig. 853. Bushing



Fig. 854. Reducer

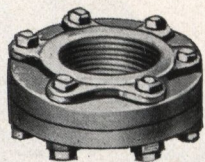


Fig. 855. Cap



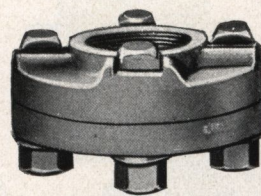
Fig. 856. Locknut

Brass Bushings, Reducers, Caps and Locknuts furnished from cast iron patterns to order at special prices.

Fig. 857. Standard
For 125 Pounds Pressure

Brass Flange Unions, Standard and Extra Heavy

Iron Bolts

Fig. 858. Extra Heavy
For 250 Pounds Pressure

Brass Flange Unions—Standard

Iron Bolts

Size, inches.....	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6
Each.....	4.00	4.50	5.00	5.50	7.00	9.00	11.50	15.00	18.00	22.00	27.00	35.00	45.00

Brass Flange Unions—Extra Heavy

Iron Bolts

Size, inches.....	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6
Each.....	7.50	8.50	11.00	13.00	16.00	18.00	24.00	27.00	30.00	37.00	48.00	60.00

Seamless Drawn Brass Plumbers' Tubes

12-Foot Lengths Only

Outside Diameter, inches.....	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2
Stub's Gauge, number.....	15	15	15	14	13	13	13	13
Weight, per foot.....	.46	.56	.67	.88	1.27	1.55	1.82	2.10

Copper Tubes weigh 5 per cent. more than corresponding size of Brass. Furnished at market prices.

For Complete Dimensions, etc., of Brass and Copper Pipe, see page 20.

Hydraulic Fittings

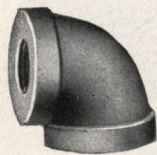


Fig. 860. Elbow

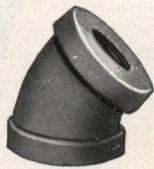


Fig. 861. Elbow, 45°

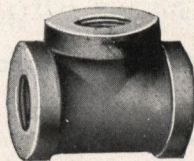


Fig. 862. Tee

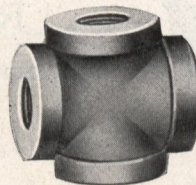


Fig. 863. Cross

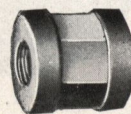


Fig. 864. Coupling

Steel Hydraulic Fittings, 6000 Pounds Test

Size, inches.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Elbows, 90°, each.....	.90	1.10	1.50	1.80	2.40	3.00	4.50	7.50
Elbows, 90°, Right and Left, each.....	1.20	1.50	2.00	2.40	3.20	4.00	6.00	9.00
Elbows, 45°, each.....	1.20	1.50	2.00	2.40	3.20	4.00	6.00	9.00
Elbows, Reducing, each.....	.....	1.50	2.00	2.40	3.20	4.00	6.00	9.00
Tees, each.....	1.40	1.80	2.30	2.70	3.60	4.50	6.80	10.50
Crosses, each.....	1.80	2.30	3.00	3.60	4.80	6.00	10.80	15.00
Couplings, each.....	.90	1.10	1.50	1.80	2.40	3.00	4.50	7.50

Steel Hydraulic Fittings

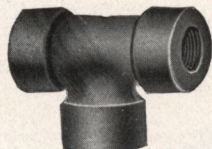
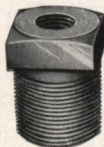
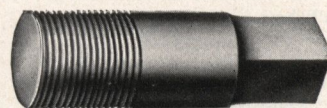
Fig. 865
Elbow, Easy TurnFig. 866
Tee, Easy TurnFig. 866A. Bushing,
Reducing one size only

Fig. 867. Solid Steel Plug

Steel Hydraulic Fittings, 6000 Pounds Test

Size, inches.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Easy Turn Elbow, each.....	.....	1.50	2.00	2.80	3.50	5.00	6.50	8.50	....
Easy Turn Tee, each.....	.....	2.50	3.40	4.30	5.20	7.50	9.50	11.50	....
Bushings, each.....	1.50	2.00	2.50	3.00	4.00	5.00	6.00	7.00	8.50
Solid Steel Plugs, each.....	.40	.50	.70	1.20	1.60	2.10	3.20	4.00	5.50

Bronze Hydraulic Fittings

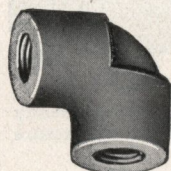


Fig. 868. Elbow

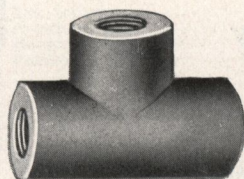


Fig. 869. Tee

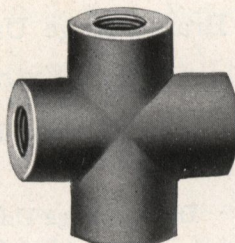


Fig. 869A. Cross

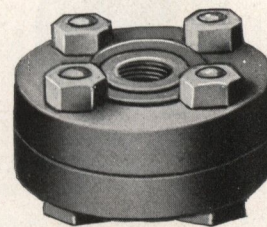


Fig. 869B. Flange Union

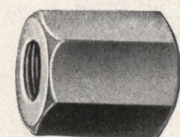


Fig. 869C. Coupling

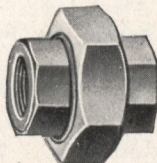


Fig. 869D. Ground Joint Union

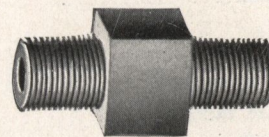


Fig. 869E. Nipple

Bronze Hydraulic Fittings for Pressures to 5,000 Pounds

Size, inches.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Fig. 868, Elbow, each.....	.60	.85	1.40	1.90	2.40	3.80	5.30	9.00	.....	.....
Fig. 869, Tee, each.....	.90	1.25	1.85	2.75	3.65	5.85	7.80	15.00	.....	.....
Fig. 869A, Cross, each.....	1.22	1.66	2.48	3.70	4.90	7.76	10.38	20.00	.....	.....
Fig. 869B, Flange Union, each.....	.....	4.50	6.15	7.90	9.60	11.40	13.55	28.00	40.00	.....
Fig. 869C, Coupling, each.....	.60	.85	1.00	1.42	1.86	2.72	4.00	7.20	.....	.....
Fig. 869D, Union, each.....	1.60	1.95	2.20	2.70	3.30	4.80	6.40	10.25	11.25	17.00
Fig. 869E, Nipple, each.....	.65	.90	1.08	1.42	1.90	2.50	3.30	4.80	.....	.....

Note: Fittings for Higher Pressures to 10,000 pounds on special orders.

Hydraulic Fittings

Flange Unions, Double Extra Strong

For 6000 Pounds Pressure

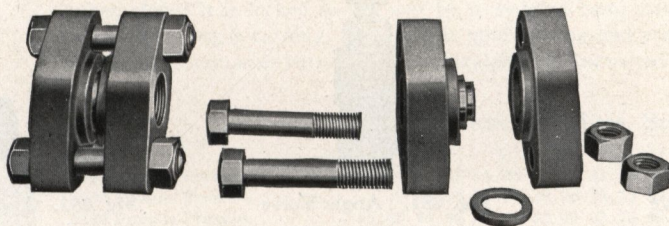
Forged
Steel PartsTwo-
Bolt Type

Fig. 870. Hydraulic Flange Union

These Unions are made of two forged steel parts, with male and female connections having a leather washer between, each half having inside threads for pipe connections. This type of union is universally used in connection with hydraulic pumps, presses and accumulators, and we recommend them for all pressures of 1000 to 6000 pounds and from $\frac{3}{8}$ inch to $2\frac{1}{2}$ inches in size. Single flange, one-half price of pair. Reducing unions take price of larger size.

Two-Bolt Type For Pressures to 6,000 Pounds

Size, inches.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Weight, pounds.....	$3\frac{1}{2}$	$3\frac{1}{2}$	$5\frac{1}{2}$	$5\frac{3}{4}$	$8\frac{1}{2}$	$11\frac{1}{4}$	21	30
Complete, each.....	4.50	4.50	5.50	6.50	8.00	9.50	11.00	15.00

Four-Bolt Type

For Pressures to 3000 Pounds

Size, inches.....	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6
Weight, pounds.....	21	28	40	55	75	95	115	150
Complete, each.....	18.00	24.00	40.00	50.00	60.00	70.00	80.00	90.00

Cast Iron Hydraulic Fittings

For 1000 Pounds Pressure

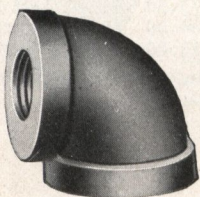


Fig. 872. Elbow

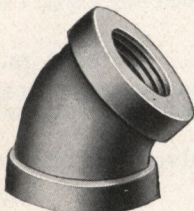


Fig. 873. 45° Elbow

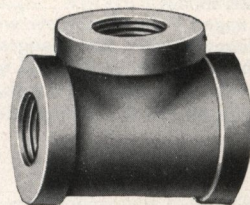


Fig. 874. Tee

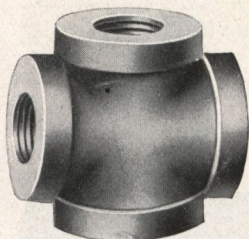


Fig. 875. Cross

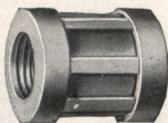


Fig. 876. Coupling

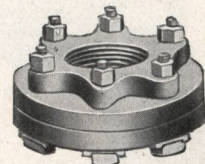


Fig. 877. Flange Union

Cast Iron Hydraulic Fittings

For 1000 Pounds Pressure

Size, inches.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6
Elbows.....	.60	.90	1.00	1.40	1.60	2.50	3.70	4.50	5.50	6.00	8.00	10.00	12.00
Elbows, 45°.....	.90	1.30	1.50	2.00	2.50	3.50	4.50	5.00	6.00	7.00	9.00	10.50	12.50
Tees.....	.90	1.30	1.50	2.10	2.60	3.80	5.50	6.60	8.00	9.00	12.00	15.00	18.00
Crosses.....	1.20	1.80	2.00	2.80	3.20	5.00	7.40	9.00	11.00	12.00	16.00	20.00	24.00
Couplings.....	.50	.80	.90	1.30	1.50	2.30	3.30	4.00	.....	.....	.....	.....	.....
Flange Unions.....	2.40	2.60	2.80	3.00	4.00	4.50	6.00	7.00	8.00	9.00	10.00	11.00	13.00

Note: Reducing sizes furnished bushed in the sand at special prices.

Hydraulic Stop and Check Valves

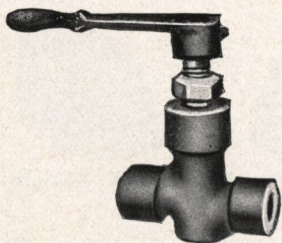


Fig. 880. Globe Valve

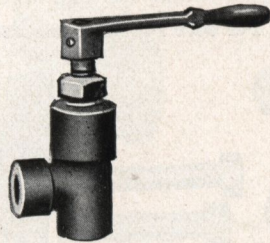


Fig. 881. Angle Valve

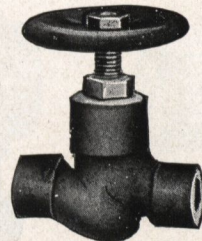


Fig. 882. Globe Valve with Hand Wheel

Hydraulic Globe and Angle Valves—With Lever Handle or Hand Wheel

Size, inches.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Each.....	16.00	18.00	24.00	32.00	44.00	60.00	70.00	90.00

Note: Valves $1\frac{1}{2}$ inches and smaller are Bronze and designed for pressures to 6,000 pounds. Valves 2 and $2\frac{1}{2}$ inches are Steel construction, and are designed for pressures to 4,000 pounds. Levers furnished unless ordered otherwise.

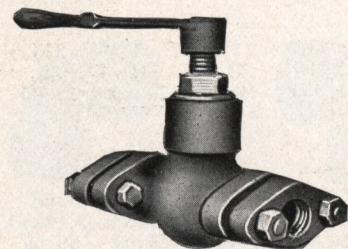


Fig. 883. Flanged

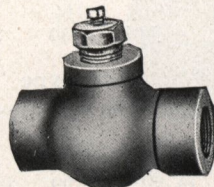


Fig. 884. Horizontal Check



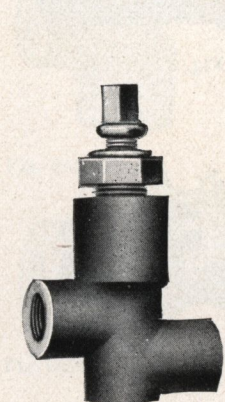
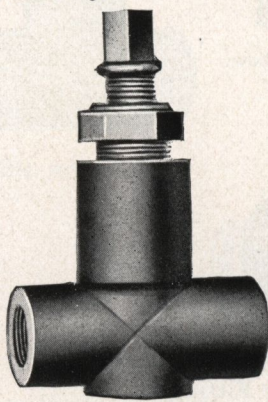
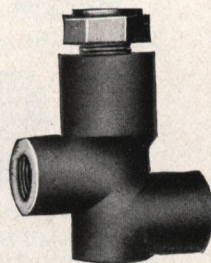
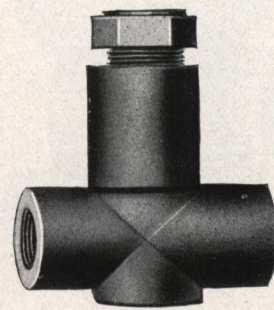
Fig. 885. Vertical Check

Hydraulic Straightway and Check Valves

Size, inches.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Flanged Valve Complete with Lever or Wheel.....				46.50	60.00	73.50	91.00	115.00
Flanged Valve, less Flanges, with Lever or Wheel.....				40.00	52.00	64.00	80.00	100.00
Check Valves, Horizontal or Vertical.....	16.00	18.00	24.00	30.00	36.00	42.00	48.00	80.00

Note: Flanged Valves $1\frac{1}{2}$ inches and smaller are Bronze and for pressures to 6,000 pounds. Larger sizes, Cast Steel, for pressures to 4,000 pounds. Check Valves are Bronze and for pressures to 6,000 pounds.

Bronze Hydraulic Valves for Pressures to 10,000 Pounds

Fig. 886. Stop Valve
 $\frac{3}{4}$ inch and smallerFig. 887. Stop Valve
1 inch and largerFig. 888. Check Valve
 $\frac{3}{4}$ inch and smallerFig. 889. Check Valve
1 inch and larger

Bronze Hydraulic Valves for Pressures to 5,000 Pounds

Size.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Hydraulic Stop Valves.....	5.00	5.25	5.65	7.40	11.00	18.00	25.00	60.00

Hydraulic Check Valves, quoted on application.

Note. Valves for higher pressures to 10,000 pounds on special orders.

Special Hydraulic Valves

Balanced Plug Valve

In this valve the plug is balanced and held in place by the pressure when open, and when closed it is locked in the seat by a wedging cam, insuring freedom from friction in seat while plug is turning, rendering it quick acting and easily operated. It is opened or closed with a quarter turn, and has a straight, unobstructed passage.

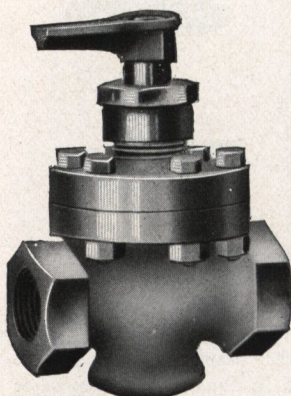


Fig. 892. Balanced Hydraulic Plug Valve

Hydraulic Balanced Valves, Screwed

Size.....	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
1500 Pounds Pressure....	6.40	6.40	10.60	15.60	24.20	31.30	41.90	44.50	80.00	126.60	200.00
3000 Pounds Pressure....			15.96	29.76	38.26	53.13	63.76	73.13	116.86	170.00	340.00
5000 Pounds Pressure....			17.00	23.36	38.26	51.00	63.76	89.26	165.76	255.00	340.00

Prices include Malleable Iron Operating Wrench.

Release Valves—Plain Screw Stem, 3-Way

For Pressure to 6000 Pounds

Bronze

Size.....	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Each.....	16.00	18.00	26.00	34.00	46.00	62.00	90.00

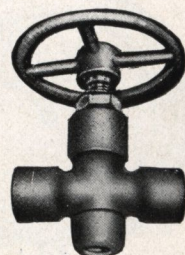


Fig. 894

Hydraulic Relief Valve

Designed for all hydraulic pressure conditions. Extensively used on hydraulic presses, pumps, etc., or wherever an automatic high pressure relief is required. Can be readily taken apart for cleaning or reseating. Made in all sizes of high grade composition metal with springs of Jessop's steel.

Furnished as listed with screwed inlet and outlet, but can be furnished with flanged inlet where desired at an extra net charge of 1.25 per inch diameter of valve for each flange. Always state pressure at which valve is to be set.



Fig. 895

Size, inches.....	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2
Pressures to 2000 Pounds, each....	10.00	10.00	12.00	12.00	16.00	20.00	24.00	30.00	40.00	60.00	90.00	125.00
Heigher than 2000 Pounds, each...	16.00	16.00	20.00	20.00	24.00	32.00	44.00	60.00	80.00	104.00	140.00	180.00

Hydraulic Safety Valve

Bronze construction with iron lever and weight. In standard construction the lever is graduated from 1,000 to 4,000 pounds, but special graduations within this range can be furnished at additional cost.

Hydraulic Safety Valves

Size.....	1/2	3/4	1	1 1/4	1 1/2
Each.....	8.50	10.00	12.50	17.00	20.00

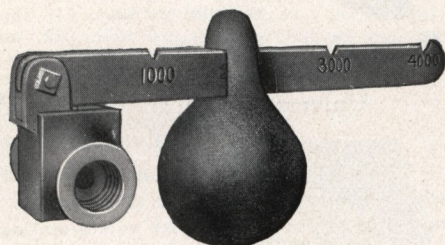


Fig. 896

Hydraulic Filters, 6,000 Pounds Pressure

This device placed in the hydraulic line retards grit and other particles in the liquid which would otherwise tend to score sliding contact surfaces, tear the packings, and cause the valve to leak. The body is made from machine steel. A plug is provided in the bottom of the filter to drain it, and the interior parts are readily removed for cleaning, by removing the cap. No system is complete without a filter.

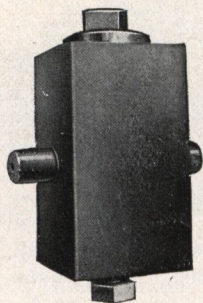
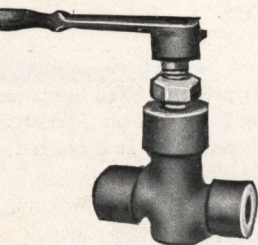


Fig. 897

Size.....	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Each.....	40.00	45.00	50.00	60.00	65.00	70.00	75.00	90.00



Hydraulic Regulating Valves

Needle Valves

These valves are similar in appearance to our Stop Valves, but are made with a Needle Valve Stem, and are used for regulating the amount of water passing through the valves.

Sizes to 1½ inches inclusive Bronze, for 6,000 pounds. Larger, Steel, for 4,000 pounds pressure.

Size.....	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Each.....	18.50	21.00	27.50	37.00	51.00	69.00	76.50	100.00

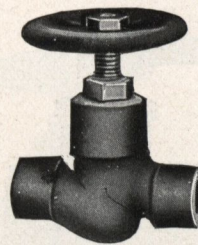


Fig. 901. With Wheel

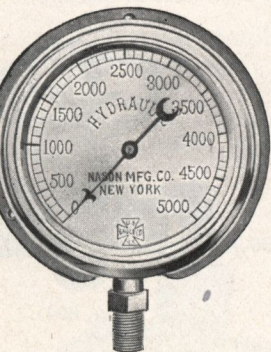


Fig. 902

Hydraulic Pressure Gauge

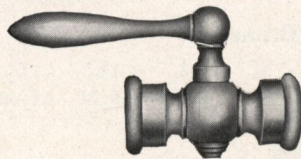


Fig. 903. Cock

Hydraulic Cock

Size, 1/2 inch.....	8.00
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Check Valves

Size, 1/2 inch, without Set Screw...	6.00
With Set Screw for quick release..	8.00

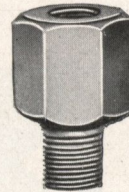


Fig. 904
Check

Size, Dial, inches.....	4 1/2	5	6	6 3/4	8 1/2
Iron Case, Brass Ring.....	25.00	30.00	35.00	50.00	70.00

Hydraulic Test Pumps

Star Hydraulic Test Pump

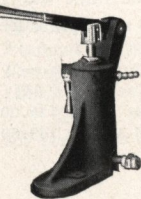


Fig. 905. Star

The pump is designed for working pressures up to 1,500 pounds, although it is actually capable of much higher pressures. The testing pump is a compound one, having two pistons, the larger one being double the area of the smaller one, so that for the same pressure exerted on the operating lever two pressures may be obtained. The volume of discharge in each case is, of course, in inverse proportion to the delivered pressure. In using the pump for the first few strokes to fill the void in the vessel or system under test the lower pressure is desired; then a change in the valve control gives the higher pressure for the final testing.

List price.....	32.00
-----------------	-------

Universal Hydrostatic Single Pump Pressure Pump—With Inverted Valves and Piston Guide Attachment

This pump with one man at the lever will exert a working pressure of 6,000 pounds to the square inch. Designed for use where the service is unusually severe and where it is either inconvenient or impossible to use a pump with valves seating in the usual manner. It is a single pump and consists of an iron base, to which is bolted a hydraulic metal pump body containing the valve and piston chambers. Liquid supply is received through pipe shown on side of cut, usually by means of rubber hose. All sediment and grit is caught in the sediment chamber at the bottom of the valves.

List Price.....	100.00
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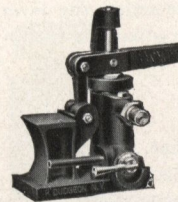


Fig. 906
Single Pump

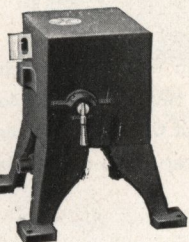


Fig. 907. Cistern
Pressure Pump

Universal Hydraulic Double Pump Cistern Pressure Pump

This pump is made with three sizes of cisterns, viz., 2½, 5 and 10 gallons, and is designed to exert a pressure of 2,000 pounds with two pumps in operation and 6,000 pounds to the square inch with one pump in operation. It can, however, be made to work at any pressure required. Valves are so located in the pump that all the fluid in the cistern is available. If more fluid is required it may be either poured into the cistern or allowed to flow in by means of a siphon or other arrangement. Pump has two pistons, the larger one being three times the area of the smaller one, so that for the same pressure exerted upon the operating lever two pressures may be obtained.

Further particulars and prices furnished on application.

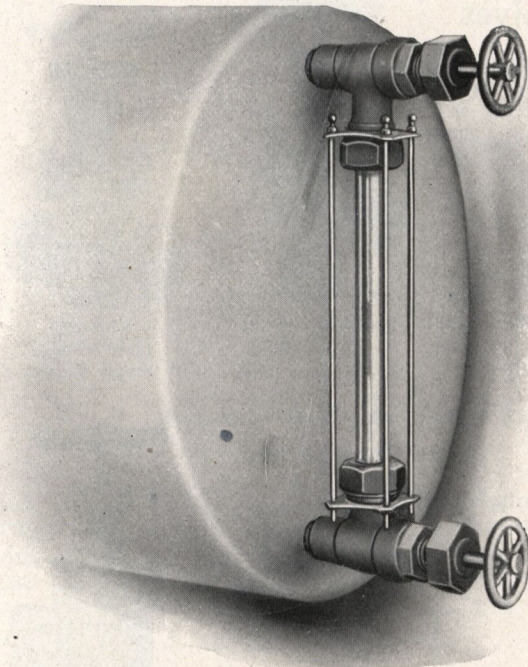


Fig. 910. Liquid Ammonia Gauge

Shank Thread, Iron Pipe Gauge, inches.....	1/2	3/4	1
Standard length of Glass, inches.....	16	16	16
Size of Gauge Glass, inches.....	3/4	3/4	3/4
Standard, complete for 16-inch center, each.....	10.00	12.50	15.00
Extra Heavy, complete for 16-inch center, each.....	12.50	15.00	20.00

All-Iron Ammonia Relief Valve

Approved Massachusetts Standard

Requirements of Massachusetts Board of Boiler Rules:

The minimum size of Relief Valves used on ammonia compressors shall be as follows:	1/2-inch valve based on	120 cubic feet displacement per minute
	3/4-inch valve based on	280 cubic feet displacement per minute
	1-inch valve based on	510 cubic feet displacement per minute
	1 1/4-inch valve based on	830 cubic feet displacement per minute
	1 1/2-inch valve based on	1200 cubic feet displacement per minute
	2-inch valve based on	2120 cubic feet displacement per minute

The discharge outlets of relief valves must be threaded or flanged for pipe connections as follows:

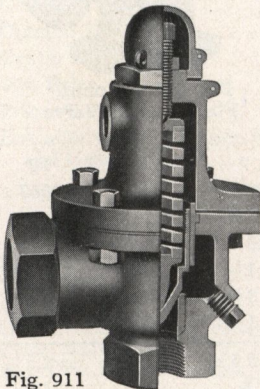


Fig. 911
All-Iron Relief Valve

1/2-inch valve with	1-inch pipe outlet
3/4-inch valve with	1 1/4-inch pipe outlet
1-inch valve with	1 1/2-inch pipe outlet
1 1/4-inch valve with	2-inch pipe outlet
1 1/2-inch valve with	2 1/2-inch pipe outlet
2-inch valve with	3-inch pipe outlet

All relief valves are tested and set to open at 250 pounds pressure with full lift of at least one-sixth their diameter at maximum pressure of 275 pounds.

Size.....	1/2	3/4	1	1 1/4	1 1/2	2
Each.....	25.00	30.00	37.00	45.00	55.00	65.00

Approved Massachusetts Diffuser

For use in connection with approved Ammonia Relief Valves. Applied in a vertical position at the end of the discharge pipe from the relief valve on all applications where the ammonia discharges into the atmosphere through a pipe other than a ventilating stack. Have bottom inlet connections same size as outlet connection of relief valve with which they are used.

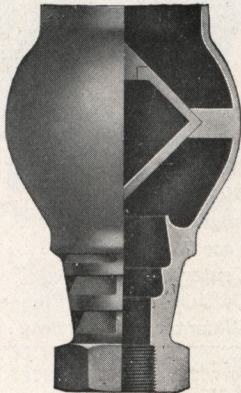
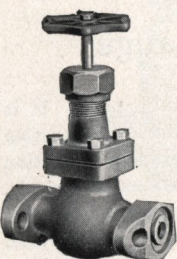


Fig. 912. Diffuser

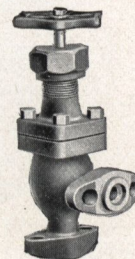
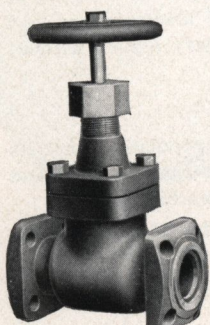
Size, Diffuser, inches.....	1	1 1/4	1 1/2	2	2 1/2	3
For Valve size, inches.....	1/2	3/4	1	1 1/4	1 1/2	2
Diffusers, each.....	8.00	15.00	15.00	25.00	25.00	45.00

Ammonia Valves

Globe and Angle Valves

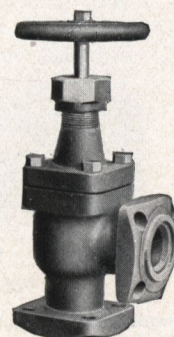
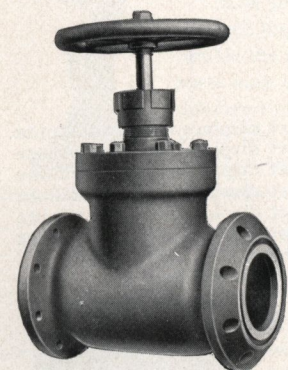
Fig. 920
Oval Flange Globe Valve

Size, inch.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$
Globe No.....	2508	2969	2512	2970
Angle No.....	2510	2971	2548	2972
Outside Size Flanges.....	$3\frac{1}{2}$	$3\frac{1}{2}$	$4\frac{3}{8}$	$4\frac{3}{8}$
Face to Face, Globe.....	$6\frac{1}{2}$	$6\frac{1}{2}$	7	7
Center to Face, Angle.....	$3\frac{1}{4}$	$3\frac{1}{4}$	$3\frac{1}{2}$	$3\frac{1}{2}$
Center of Bolts.....	$2\frac{3}{8}$	$2\frac{3}{8}$	3	3
Size of Bolts.....	$\frac{1}{2} \times 3$	$\frac{1}{2} \times 3$	$\frac{5}{8} \times 2\frac{3}{4}$	$\frac{5}{8} \times 2\frac{3}{4}$
Price, Valve only.....	3.60	3.90	4.20	4.50
Extra for Comp. Flanges, Bolts and Gaskets.....	.68	.72	.88	.92

Fig. 921
Oval Flange Angle ValveFig. 922
Square Flange Globe Valve

Square Flange—Steel or Composition Seat

Size, inches.....	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Globe, No.....	2521	2495	2499	2445
Angle, No.....	2876	2513	2511	2872
Outside Size Flange.....	$3\frac{3}{4}$	$3\frac{3}{4}$	$4\frac{1}{4}$	$4\frac{3}{4}$
Face to Face, Globe.....	$7\frac{1}{4}$	$7\frac{1}{2}$	$8\frac{1}{2}$	9
Center to Face, Angle.....	$3\frac{5}{8}$	$3\frac{3}{4}$	$4\frac{1}{4}$	$4\frac{1}{2}$
Center of Bolts.....	$2\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{3}{4}$	$3\frac{3}{16}$
Size of Bolts.....	$\frac{1}{2} \times 2\frac{3}{4}$	$\frac{1}{2} \times 2\frac{3}{4}$	$\frac{5}{8} \times 3$	$\frac{5}{8} \times 3\frac{1}{8}$
Price, Valve only.....	6.00	7.20	9.00	11.40
Extra for Comp. Flanges, Bolts and Gaskets.....	1.36	1.48	1.76	2.00

Fig. 923
Square Flange Angle ValveFig. 924
Round Flange Globe Valve

Ammonia Globe and Angle Valves

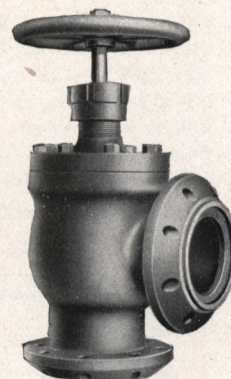
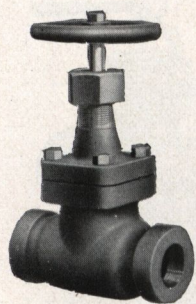
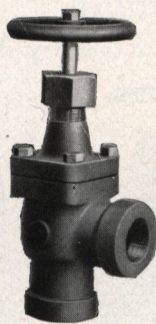
Steel or Composition Seat
Round Flange

Fig. 925. Round Flange Angle Valve

Size, inches.....	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	5	6	7	8	10
Globe No.....	2434	2448	2488	2475	2464	2455	2688	2747	4367
Angle No.....	2468	2473	2490	2481	2466	2460	2705	2757	....
Face to Face, Globe.....	12	$12\frac{1}{2}$	$13\frac{1}{2}$	$14\frac{1}{2}$	17	19	23	$25\frac{1}{2}$	32
Center to Face, Angle.....	6	$6\frac{1}{4}$	$6\frac{3}{4}$	$7\frac{1}{4}$	$8\frac{1}{2}$	$9\frac{1}{2}$	$11\frac{1}{2}$	$12\frac{3}{4}$	16
Outside Diameter Flange.....	$7\frac{1}{8}$	$7\frac{7}{8}$	$8\frac{5}{8}$	$9\frac{3}{8}$	$10\frac{1}{4}$	$11\frac{1}{2}$	$13\frac{1}{2}$	$14\frac{1}{2}$	17
Diameter Bolt Circle.....	$5\frac{1}{2}$	$6\frac{1}{8}$	$6\frac{7}{8}$	$7\frac{5}{8}$	$8\frac{1}{2}$	$9\frac{3}{4}$	$11\frac{1}{8}$	$12\frac{1}{2}$	15
Size of Bolts.....	$\frac{3}{4} \times 4\frac{1}{2}$	$\frac{5}{8} \times 4\frac{1}{2}$	$\frac{5}{8} \times 4\frac{1}{2}$	$\frac{5}{8} \times 4\frac{1}{2}$	$\frac{5}{8} \times 5$	$\frac{3}{4} \times 5\frac{1}{2}$	$\frac{7}{8} \times 5\frac{1}{2}$	$\frac{7}{8} \times 5\frac{3}{4}$	$\frac{7}{8} \times 5\frac{3}{4}$
Number of Bolts.....	4	8	8	8	8	8	8	8	12
Price, Valve only.....	22.00	24.00	32.00	42.00	60.00	80.00	100.00	130.00	170.00
Extra for Comp. Flanges, Bolts and Gaskets.....	6.20	7.52	8.56	9.40	10.92	14.76	19.44	23.56	30.20

In ordering these valves, confusion and errors will be avoided if the size valve and its number are distinctly specified.

Fig. 930
Globe ValveFig. 931
Angle Valve

Ammonia Valves

Globe and Angle Valves

Steel or Composition Seat—Screwed

Size, inches.....	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Globe No.....	2268	2569	2577	2560	2558
Angle No.....	.....	2575	2579	2576	2559
Face to Face, Globe.....	4	$6\frac{1}{4}$	7	$7\frac{1}{2}$	9
Center to Face, Angle.....	.....	$3\frac{1}{8}$	$3\frac{1}{2}$	$3\frac{3}{4}$	$4\frac{1}{2}$
Each.....	4.30	4.70	6.00	7.20	9.50

In ordering, please specify number and size.

Ammonia Globe and Angle Valves

Steel Seat—Screwed

Size, inches.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$
Globe No.....	1R-2831	1R-2832	1R-2475	.....
Angle No.....	1R-2828	2R-2828	1R-2829	1R-2830
Globe, each.....	2.70	3.50	4.00	.....
Angle, each.....	2.70	3.50	4.00	4.30



Fig. 932. Globe



Fig. 933. Angle

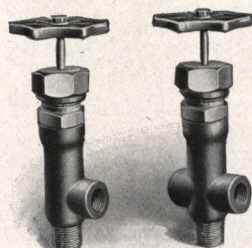


Fig. 934.



Fig. 935

Ammonia Valves—Male End—Steel Seat—Angle Style

Size, inch.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$
Pipe Size, Bottom.....	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$	1
Valve No.....	3R-2828	4R-2828	2R-2828M	2R-2830
Each.....	2.70	3.50	4.00	4.30

Tee Style

Size, inches.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{3}{4}$	$1\frac{1}{4}$ — $\frac{3}{8}$
Pipe Size, Bottom.....	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$	1	1	$\frac{1}{2}$
Valve No.....	3R-2833	4R-2833	2R-2834	2R-2835	2R-2837	1R-2836
Each.....	4.50	5.00	5.50	6.00	6.00	5.00

Ammonia Tee Valves

Square Flanged

Size, inches.....	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Valve No.....	4446	4688	4188
Center to Face.....	$3\frac{3}{4}$	$4\frac{1}{4}$	$4\frac{1}{2}$
Outside Size, Flange.....	$3\frac{3}{4}$	$4\frac{1}{4}$	$4\frac{3}{4}$
Center of Bolts.....	$2\frac{1}{2}$	$2\frac{3}{4}$	$3\frac{3}{16}$
Size Bolts.....	$\frac{1}{2} \times 2\frac{3}{4}$	$\frac{5}{8} \times 3$	$\frac{5}{8} \times 3\frac{1}{8}$
Price, Valve only.....	9.00	12.00	15.00
Extra for Comp. Flanges, Bolts and Gaskets.....	2.22	2.64	3.00

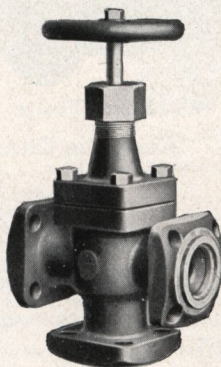


Fig. 936

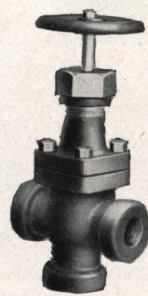


Fig. 937

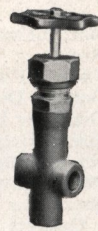


Fig. 938

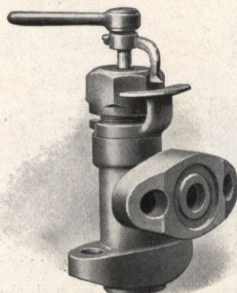
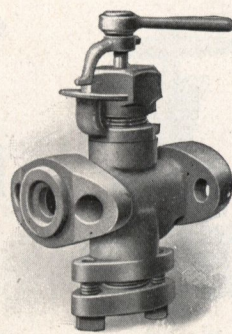
Round Flanged

Size, inches.....	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	5
Valve No.....	4684	4685	4686	4687	4143
Center to Face.....	6	$6\frac{1}{4}$	$6\frac{3}{4}$	$7\frac{1}{4}$	$8\frac{1}{2}$
Outside Diameter of Flange.....	$7\frac{1}{8}$	$7\frac{7}{8}$	$8\frac{5}{8}$	$9\frac{3}{8}$	$10\frac{1}{4}$
Price, Valve only.....	24.00	27.00	35.00	46.00	64.00
Extra for Comp. Flanges, Bolts and Gaskets.....	9.30	11.28	12.84	14.10	16.38

Screw End

Size, inches.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Valve No.....	3013	3014	3015	3016	2667	4292	.....	4403
Each.....	4.50	5.00	5.50	6.00	7.00	8.00	10.00	12.00

Ammonia Valves

Fig. 940
Globe Expansion ValveFig. 941
Angle Expansion ValveFig. 942
Globe Expansion CockFig. 943
Angle Expansion Cock

Ammonia Expansion Valves—Steel Seat

Size, inch.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$
Globe, Fig. 940, No.....	3021	3022	3023	3020
Angle, Fig. 941, No.....	3017	3018	3019	.....
Globe, Fig. 940, each.....	2.70	3.50	4.00	.....
Angle, Fig. 941, each.....	2.70	3.50	4.00	4.30

Expansion Cocks

Companion Flanges Tapped, inch.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$
Price, Globe or Angle, Cock only.....	12.00	12.00	12.00
Extra for Companion Flanges, Bolts and Gaskets.....	.92	.92	.92
Outside Size of Flange, inches.....	$4\frac{3}{8}$	$4\frac{3}{8}$	$4\frac{3}{8}$
Center of Bolts, inches.....	3	3	3
Face to Face of Flange, Globe, inches.....	$5\frac{1}{2}$	$5\frac{1}{2}$	$5\frac{1}{2}$
Center to Face, Angle, inches.....	$2\frac{3}{4}$	$2\frac{3}{4}$	$2\frac{3}{4}$
Size of Bolts, inches.....	$\frac{5}{8} \times 2\frac{3}{4}$	$\frac{5}{8} \times 2\frac{3}{4}$	$\frac{5}{8} \times 2\frac{3}{4}$

No. of Globe Style, 4040. No. of Angle Style, 4037. In ordering, specify size of valve and number.

Price, Handle only..... .10

Ammonia Check Valves

Square Flange

Size, inches.....	$1\frac{1}{4}$	$1\frac{1}{2}$	2
No.....	4202	4202	4204
Face to Face, inches.....	$7\frac{1}{2}$	$8\frac{1}{2}$	9
Outside Size Flange, inches.....	$3\frac{3}{4}$	$4\frac{1}{4}$	$4\frac{1}{8}$
Center of Bolts, inches.....	$2\frac{1}{2}$	$2\frac{3}{4}$	$3\frac{1}{8}$
Size of Bolts, inches.....	$\frac{1}{2} \times 2\frac{3}{4}$	$\frac{5}{8} \times 3$	$\frac{5}{8} \times 3\frac{1}{8}$
No. Bolts.....	4	4	4
Valve, only.....	10.00	12.00	14.00
Extra for Comp. Flanges, Bolts and Gaskets.....	1.48	1.76	2.00

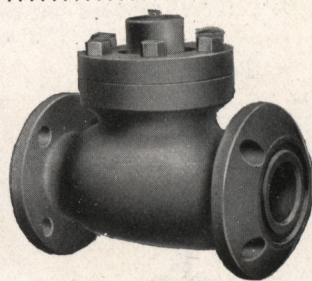
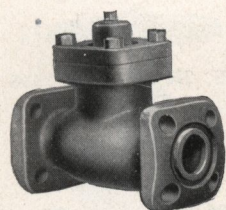


Fig. 944. Square Flange

Fig. 945. Round Flange

Ammonia Check Valves—Round Flange

Size, inches.....	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	5	6	7	8
No.....	4175	4155	4198	4157	4178	4159	4265	4500
Face to Face, inches.....	12	$12\frac{1}{2}$	$13\frac{1}{2}$	$14\frac{1}{2}$	17	19	23	$25\frac{1}{2}$
Outside Diameter Flange, inches.....	$7\frac{1}{8}$	$7\frac{7}{8}$	$8\frac{3}{8}$	$9\frac{3}{8}$	$10\frac{1}{4}$	$11\frac{1}{2}$	$13\frac{1}{2}$	$14\frac{1}{2}$
Diameter Bolt Circle, inches.....	$5\frac{1}{2}$	$6\frac{1}{8}$	$6\frac{7}{8}$	$7\frac{5}{8}$	$8\frac{1}{2}$	$9\frac{3}{4}$	$11\frac{1}{8}$	$12\frac{1}{2}$
Size of Bolts, inches.....	$\frac{3}{4} \times 4\frac{1}{2}$	$\frac{5}{8} \times 4\frac{1}{2}$	$\frac{5}{8} \times 4\frac{1}{2}$	$\frac{5}{8} \times 4\frac{1}{2}$	$\frac{5}{8} \times 5$	$\frac{3}{4} \times 5\frac{1}{2}$	$\frac{7}{8} \times 5\frac{1}{2}$	$\frac{7}{8} \times 5\frac{3}{4}$
No. of Bolts.....	4	8	8	8	8	8	8	8
Price, Valve only.....	22.00	24.00	32.00	42.00	60.00	80.00	100.00	130.00
Extra for Comp. Flanges, Bolts and Gaskets.....	6.20	7.52	8.56	9.40	10.92	14.76	19.44	23.56

Note: Fig. 944-945 Check Valves are made with Dash Pot for constant operation.

Ammonia Check Valves

With Rotating Discs

Screwed and Counter-bored and Gland End

Size, inches.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Fig. 946, Screwed, each.....	1.95	2.10	2.25	2.75	3.50	4.25
Fig. 947, Gland End, each.....	2.80	3.10	3.40	4.00	4.85	5.90
End to End, Screwed, inches..	4	$4\frac{3}{4}$	$5\frac{1}{2}$	6	$6\frac{3}{4}$	$7\frac{1}{4}$
End to End, Gland End, inches	$4\frac{1}{8}$	$4\frac{7}{8}$	$5\frac{5}{8}$	$6\frac{1}{4}$	$7\frac{1}{4}$	$7\frac{1}{2}$

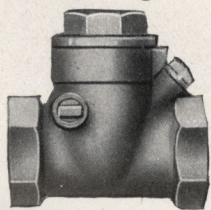
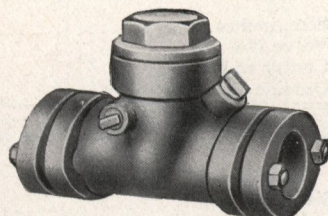
Fig. 946. Screwed
and Counter-bored

Fig. 947. Gland End

Ammonia Globe and Angle Valves

Safety Relief to Low Pressure System—Steel or Composition Seat

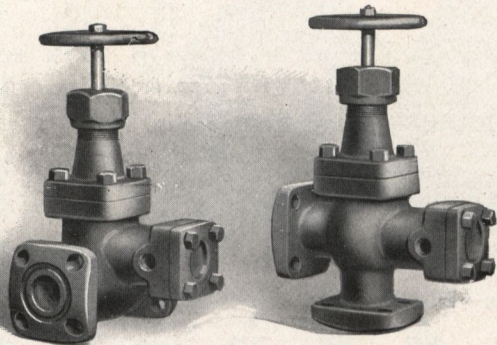


Fig. 950. Safety Relief Valves

Globe—Square Flange

Size, inches.....	1½	2
Valve No.....	4346	4347
Face to Face, inches.....	7½	8½
O. S. of Flange, inches.....	3¾	4½
Center of Bolts, inches.....	2½	3¼
Size of Bolts, inches.....	½ x 2¾	⅝ x 3
Number of Bolts.....	4	4
Valve only, each.....	16.00	18.00
Complete, each.....	17.48	19.76

Angle—Square Flange

Size, inches.....	1½	2
Valve No.....	4336	4337
Center to Face, inches.....	3¾	4½
O. S. of Flange, inches.....	3¾	4½
Center of Bolts, inches.....	2½	3¼
Size of Bolts, inches.....	½ x 2¾	⅝ x 3
Number of Bolts.....	4	4
Valve only, each.....	16.00	18.00
Complete, each.....	17.48	19.76

Globe—Round Flange

Size, inches.....	2½	3	3½	4	5	6	7	8
Valve No.....	4353	4343	4355	4358	4360	4362	....	....
Face to Face, inches.....	12	12½	13½	14½	17	19	23	25½
O. D. of Flange, inches.....	7½	7¾	8½	9¾	10¼	11½	13½	14½
Bolt Circle, inches.....	5½	6½	6¾	7¾	8½	9¾	11½	12½
Size Bolts, inches.....	¾ x 4½	⅝ x 4½	⅝ x 4½	⅝ x 4½	⅝ x 5	¾ x 5½	¾ x 5½	¾ x 5¾
Number of Bolts.....	4	8	8	8	8	8	8	8
Valve only, each.....	28.00	32.00	40.00	60.00	80.00	100.00	130.00	160.00
Complete, each.....	34.20	39.52	48.56	69.40	90.92	114.76	149.44	183.56

Angle—Round Flange

Size, inches.....	2½	3	3½	4	5	6	7	8
Valve No.....	4352	4348	4354	4357	4359	4361	....	....
Center to Face, inches.....	6	6½	6¾	7½	8½	9½	11½	12¾
Valve only, each.....	28.00	32.00	40.00	60.00	80.00	100.00	130.00	160.00
Complete, each.....	34.20	39.52	48.56	69.40	90.92	114.76	149.44	183.56

Flange diameter, Bolt circle and bolt details same as Globe Valve.

Ammonia Globe and Angle Valves

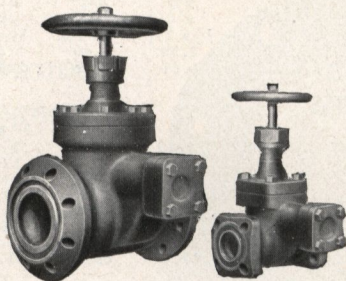
Safety Relief By-pass
Steel or
Composition Seat

Fig. 951. Globe Valves

Globe—Square Flange

Size, inches.....	1½	1½	2
No. of Valve.....	4200	4197	4196
Face to Face, inches.....	7½	8½	9
O. S. of Flange, inches.....	3¾	4½	4½
Center of Bolts, inches.....	2½	2¾	3¼
Size Bolts, inches.....	½ x 2¾	⅝ x 3	⅝ x 3½
Number of Bolts.....	4	4	4
Valves only, each.....	16.00	18.00	20.00
Complete, each.....	17.48	19.76	22.00

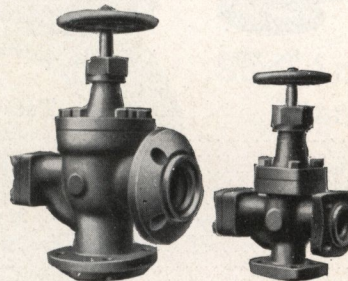


Fig. 952. Angle Valves

Angle—Square Flange

Size, inches.....	1½	1½	2
No. of Valve.....	2799	4017	4018
Center to Face, inches.....	3¾	4½	4½
O. S. of Flange, inches.....	3¾	4½	4½
Center of Bolts, inches.....	2½	2¾	3¼
Size of Bolts, inches.....	½ x 2¾	⅝ x 3	⅝ x 3½
Valve only, each.....	16.00	18.00	20.00
Complete, each.....	17.48	19.76	22.00

Globe Relief By-pass Valves—Round Flange

Size, inches.....	2½	3	3½	4	5	6	7	8
Valve No.....	4195	4194	4136	4161	4057	4201	....	....
Face to Face, inches.....	12	12½	13½	14½	17	19	23	25½
O. D. of Flange, inches.....	7½	7¾	8½	9¾	10¼	11½	13½	14½
Bolt Circle, inches.....	5½	6½	6¾	7¾	8½	9¾	11½	12½
Size Bolts, inches.....	¾ x 4½	⅝ x 4½	⅝ x 4½	⅝ x 4½	⅝ x 5	¾ x 5½	¾ x 5½	¾ x 5¾
Number of Bolts.....	4	8	8	8	8	8	8	8
Valves only, each.....	28.00	32.00	40.00	60.00	80.00	100.00	130.00	160.00
Complete, each.....	34.20	39.52	48.56	69.40	90.92	114.76	149.44	183.56

Angle Relief By-pass Valves—Round Flange

Size, inches.....	2½	3	3½	4	5	6	7	8
Valve No.....	4019	2962	2965	4021	2967	4023	4505	....
Center to Face, inches.....	6	6½	6¾	7½	8½	9½	11½	12¾
Valves only, each.....	28.00	32.00	40.00	60.00	80.00	100.00	130.00	160.00
Complete, each.....	34.20	39.52	48.56	69.40	90.92	114.76	149.44	183.56

Flange diameter, Bolt circle and Bolt details, same as Globe Valve. Order these Valves by size and number.

Ammonia Elbows



Fig. 960

Fig. 961

Fig. 962

Elbows—Oval Flange, Fig. 960

Size, inch.....	1½	2	2½	3
Elbow No.....	2614	2982	2615	2983
Center to Face, inches.....	3¼	3¼	3¼	3¼
Outside Size Flange, inches.....	3½	3½	4½	4½
Center of Bolts, inches.....	2½	2½	3	3
Size of Bolts, inches.....	½ x 2½	½ x 2½	¾ x 2¾	¾ x 2¾
Elbow only, each.....	.70	.70	1.00	1.00
Complete, each.....	1.38	1.42	1.88	1.92

Elbows—Square Flange, Fig. 961

Size, inches.....	1	1½	1½	2
Elbow No.....	2391	2392	2393	2394
Center to Face, inches.....	3½	3½	4¼	4¼
Outside Size of Flange, inches.....	3¾	3¾	4¼	4¼
Center of Bolts, inches.....	2½	2½	2¾	3
Size Bolts, inches.....	½ x 2¾	½ x 2¾	¾ x 3	¾ x 3½
Elbow only, each.....	1.30	1.40	1.60	1.90
Complete, each.....	2.66	2.88	3.36	3.90

Elbows—Round Flange—Fig. 962

Size, inches.....	2½	3	3½	4	5	6	7	8	10
Elbow No.....	2419	2420	2421	2422	2423	2424	2730	2756	4380
Center to Face, inches.....	6	6¼	6¾	7¼	8½	9½	11½	12¾	16
O. D. of Flange, inches.....	7½	7½	8½	9½	10½	11½	13½	14½	17
Bolt Circle, inches.....	5½	6½	6½	7½	8½	9¾	11½	12½	15
Size of Bolts, inches.....	¾ x 4½	¾ x 4½	¾ x 4½	¾ x 4½	¾ x 5	¾ x 5½	¾ x 5½	¾ x 5¾	¾ x 5¾
No. of Bolts.....	4	8	8	8	8	8	8	8	12
Elbow only, each.....	6.00	8.00	10.00	12.00	18.00	24.00	33.00	42.00	55.00
Complete, each.....	12.24	15.52	18.56	21.40	28.92	38.76	52.44	65.56	85.20

Ammonia Tees



Fig. 963

Fig. 964

Fig. 965

Tees—Oval Flange, Fig. 963

Size, inch.....	1½	2	2½	3
Tee No.....	2612	2973	2613	2974
Center to Face, inches.....	3¼	3¼	3¼	3¼
Outside Size Flange, inches.....	3½	3½	4½	4½
Center of Bolts, inches.....	2½	2½	3	3
Size of Bolts, inches.....	½ x 2½	½ x 2½	¾ x 2¾	¾ x 2¾
Tees only, each.....	1.20	1.20	1.50	1.50
Complete, each.....	2.22	2.28	2.82	2.88

Tees—Square Flange, Fig. 964

Size, inches.....	1	1½	1½	2
Tee No.....	2380	2381	2382	2383
Center to Face, inches.....	3½	3½	4¼	4¼
O. S. of Flange, inches.....	3¾	3¾	4¼	4¼
Center of Bolts, inches.....	2½	2½	2¾	3
Size of Bolts, inches.....	½ x 2¾	½ x 2¾	¾ x 3	¾ x 3½
Tees only, each.....	2.20	2.40	2.60	2.80
Complete, each.....	4.24	4.62	5.24	5.80

Tees—Round Flange, Fig. 965

Size, inches.....	2½	3	3½	4	5	6	7	8	10
Tee No.....	2384	2385	2386	2387	2388	2389	2729	2755	4381
Center to Face, inches.....	6	6¼	6¾	7¼	8½	9½	11½	12¾	16
O. D. of Flange, inches.....	7½	7½	8½	9½	10½	11½	13½	14½	17
Bolt Circle, inches.....	5½	6½	6½	7½	8½	9¾	11½	12½	15
Size Bolts, inches.....	¾ x 4½	¾ x 4½	¾ x 4½	¾ x 4½	¾ x 5	¾ x 5½	¾ x 5½	¾ x 5¾	¾ x 5¾
Number of Bolts.....	4	8	8	8	8	8	8	8	12
Tees only, each.....	10.80	13.00	16.00	18.00	23.00	30.00	40.00	50.00	68.00
Complete, each.....	20.10	24.28	28.84	32.10	39.38	52.14	69.16	85.34	113.30

Ammonia Crosses

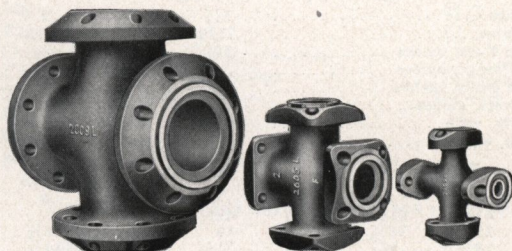


Fig. 966

Fig. 967

Fig. 968

Crosses—Oval Flange, Fig. 968

Size, inch.....	1½	2	2½	3
Cross No.....	2600	2975	2601	2976
Face to Face, inches.....	6½	6½	7¼	7¼
O. S. of Flange, inches.....	3½	3½	4½	4½
Size Bolts, inches.....	½ x 2½	½ x 2½	¾ x 2¾	¾ x 2¾
Center of Bolts, inches.....	2½	2½	3	3
Cross only, each.....	1.80	1.80	2.30	2.30
Complete, each.....	3.16	3.24	4.06	4.14

Crosses—Square Flange, Fig. 967

Size, inches.....	1	1½	1½	2
Cross No.....	2602	2603	2604	2605
Face to Face, inches.....	7¼	7¼	8½	9
O. S. of Flange, inches.....	3¾	3¾	4¼	4¼
Size Bolts, inches.....	½ x 2¾	½ x 2¾	¾ x 3	¾ x 3½
Center of Bolts, inches.....	2½	2½	2¾	3
Cross only, each.....	2.90	3.20	3.50	3.80
Complete, each.....	5.72	6.16	7.02	7.80

Crosses—Round Flange, Fig. 966

Size, inches.....	2½	3	3½	4	5	6	7	8	10
Cross No.....	2606	2607	2608	2609	2610	2611	2728	2754	4382
Face to Face, inches.....	12	12½	13½	14½	17	19	23	25½	32
O. D. of Flange, inches.....	7½	7½	8½	9½	10½	11½	13½	14½	17
Bolt Circle, inches.....	5½	6½	6½	7½	8½	9¾	11½	12½	15
Size of Bolts, inches.....	¾ x 4½	¾ x 4½	¾ x 4½	¾ x 4½	¾ x 5	¾ x 5½	¾ x 5½	¾ x 5¾	¾ x 5¾
Number of Bolts.....	4	8	8	8	8	8	8	8	12
Cross only, each.....	14.40	18.00	22.50	27.00	31.50	36.00	50.00	64.00	84.00
Complete, each.....	26.80	33.04	39.62	45.80	53.34	65.52	88.88	111.12	144.40

Ammonia Flanges—Drop Forged Steel

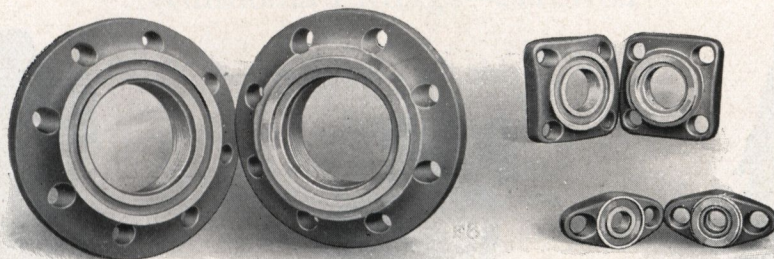


Fig. 970. Drop Forged Steel Flanges

Ammonia Flanges—Oval					Ammonia Flanges—Square			
Size, inches.....	1 1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
No. of Male Flange.....	2989	2991	2993	2995	2997	2999	3001	3003
No. of Female Flange.....	2990	2992	2994	2996	2998	3000	3002	3004
Outside of Flange, inches.....	3 1/2	3 1/2	4 3/8	4 3/8	3 3/4	3 3/4	4 1/8	4 1/2
Center of Bolts, inches.....	2 5/8	2 5/8	3	3	2 1/2	2 1/2	2 5/8	3 1/8
Size of Bolts, inches.....	1/2 x 2 1/2	1/2 x 2 1/2	5/8 x 2 3/4	5/8 x 2 3/4	1/2 x 2 3/4	1/2 x 2 3/4	5/8 x 3	5/8 x 3 1/8
Number of Bolts.....	2	2	2	2	4	4	4	4
Flanges, Male or Female, each.....	.22	.24	.26	.28	.42	.48	.52	.58
With Bolts and Gasket, each.....	.34	.36	.44	.46	.68	.74	.88	1.00
Complete, per pair.....	.56	.60	.70	.74	1.10	1.22	1.40	1.58

Round Ammonia Flanges—Drop Forged Steel

Size, inches.....	2 1/2	3	3 1/2	4	5	6	7	8	10
No. of Male Flange.....	3073	3075	3077	3079	3081	3083	3100	3102	4425
No. of Female Flange.....	3074	3076	3078	3080	3082	3084	3101	3103	4424
Diameter of Flange, inches.....	7 1/2	7 7/8	8 3/8	9 3/8	10 1/4	11 1/2	13 1/2	14 1/2	17
Diameter Bolt Circle, inches.....	5 1/2	6 1/8	6 3/8	7 5/8	8 1/2	9 3/4	11 1/8	12 1/2	15
Size of Bolts, inches.....	3/4 x 4 1/2	5/8 x 4 1/2	5/8 x 4 1/2	5/8 x 4 1/2	5/8 x 5	3/4 x 5 1/2	7/8 x 5 3/4	7/8 x 5 3/4	7/8 x 5 3/4
Number of Bolts.....	4	8	8	8	8	8	8	8	12
Flanges, Male or Female, each.....	4.40	5.00	6.00	7.00	8.00	9.20	12.50	15.50	19.50
With Bolts and Gasket, each.....	5.00	5.86	6.88	7.90	8.96	10.48	13.92	16.98	21.60
Complete, per pair.....	9.40	10.86	12.88	14.90	16.96	19.68	26.42	32.48	41.10

Note: Prior to June, 1913, tongue and groove on 2-inch flanges were different from present sizes. In ordering, specify if wanted to match the older flanges.

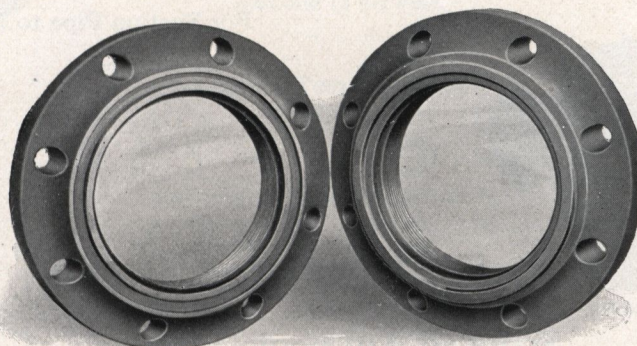
Steel Ammonia
FlangesSteel Ammonia
Flanges

Fig. 971. Round Steel Ammonia Flanges

Size, inches.....	2 1/2	3	3 1/2	4	5	6	7	8	10
No. Male Flange.....	2398	2400	2402	2406	2404	2408	2733	2757	4384
No. Female Flange.....	2399	2401	2403	2407	2405	2409	2734	2758	4383
Diameter of Flange, inches.....	7 1/2	7 7/8	8 3/8	9 3/8	10 1/4	11 1/2	13 1/2	14 1/2	17
Diameter Bolt Circle, inches.....	5 1/2	6 1/8	6 3/8	7 5/8	8 1/2	9 3/4	11 1/8	12 1/2	15
Size of Bolts, inches.....	3/4 x 4 1/2	5/8 x 4 1/2	5/8 x 4 1/2	5/8 x 4 1/2	5/8 x 5	3/4 x 5 1/2	7/8 x 5 3/4	7/8 x 5 3/4	7/8 x 5 3/4
Number of Bolts.....	4	8	8	8	8	8	8	8	12
Flanges, Male or Female, each.....	2.50	2.90	3.40	3.80	4.50	6.10	8.30	10.30	13.00
With Bolts and Gasket, each.....	3.10	3.76	4.28	4.70	5.46	7.38	9.72	11.78	15.10
Complete, per pair.....	5.60	6.66	7.68	8.50	9.96	13.48	18.02	22.08	28.10

Lead Gaskets

Size of Flange, inches.....	1/4-3/8	1/2-3/4	1-1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	7	8	10
Outside Diameter, inches.....	1 1/8	1 3/8	2 1/2	2 3/8	3 3/8	3 7/8	4 1/2	4 3/4	5 1/2	6 1/2	7 1/2	8 1/2	9 1/2	12 1/2
Inside Diameter, inches.....	1/8	1 1/8	1 1/8	2 1/8	2 3/8	2 7/8	3 1/8	3 3/8	3 7/8	4 1/2	5 1/2	6 1/2	7 1/2	11 1/8
No. of Gasket.....	3029	3030	3031	3032	3033	3033A	3034	3035	3036	3037	3038	3039	4710	4711
Per dozen.....	.24	.48	.72	.96	1.20	1.20	1.44	1.68	1.92	2.16	2.40	2.88	3.60	4.32

Rubber Gaskets

Size of Flange, inches.....	1 1/4	1 1/2	2	3 1/4	6	1-1 1/4	1 1/2	1 1/4	2	2	3 1/4	3 1/2	3 1/4	3 1/4
Outside Diameter, inches.....	2 1/4	2 3/4	3 1/8	3 3/4	6 1/2	2 1/2	2 3/4	2 3/4	3 3/8	3 1/2	4	4 1/4	4 1/4	8
Inside Diameter, inches.....	1 3/8	1 7/8	2 1/8	3 1/8	5 1/8	1 3/8	2 1/8	1 3/8	2 3/8	2 3/4	3 1/4	3 1/4	3 1/4	3
Thickness, inches.....	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8
No. of Gasket.....	3041	3042	3043	3044	3045	3104	3105	3106	3107	3108	3109	3110	3111	3111
Price, each.....	.24	.28	.32	.30	.50	.02	.02	.02	.04	.04	.14	.14	.14	.40

Special Lead Gasket for 2-inch Split Return Bends, 3-inch O. D., 2 1/8 I. D. No. 3040. Price, per dozen..... 1.20
In ordering, specify size and number.

Ammonia Safety Valves



Fig. 980. Lock-up

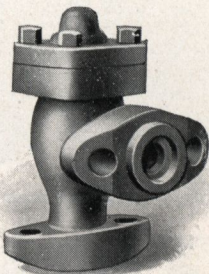


Fig. 981. Oval Flange

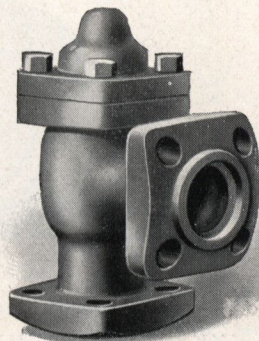


Fig. 982. Square Flange

Screwed Lock-up Pattern—Fig. 980

Size Inlet, inches.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Size Outlet, inches.....	$1-1\frac{1}{4}$	$1-1\frac{1}{4}$	$1\frac{1}{2}-2$	$1\frac{1}{4}-2$	$2\frac{1}{2}-3$	$2\frac{1}{2}-3$
Price, each.....	33.00	33.00	50.00	50.00	70.00	70.00

Regularly furnished set to relieve at 300 pounds. Can be set special for other pressures and adjusted to any point, and when adjusted locked and sealed.

Flanged Patterns—Fig. 981-982

Size, inches.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
No. of Valve.....	4166	4166	4048	4048 $\frac{1}{2}$	4167	4029	4061	4170
Valve only, each.....	6.75	6.75	9.00	10.80	13.50	17.10	33.00	36.00
Complete, each.....	7.67	7.67	10.36	12.28	15.26	19.10	39.20	43.52

Note: Sizes $2\frac{1}{2}$ and 3-inch have round flanges. Sizes 1, $1\frac{1}{4}$, $1\frac{1}{2}$ and 2-inch have square flanges. Sizes $\frac{1}{2}$ and $\frac{3}{4}$ -inch, oval flanges.



Fig. 983

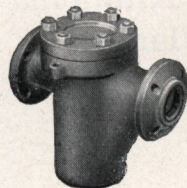


Fig. 984

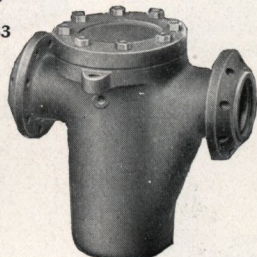


Fig. 985

Ammonia Scale Traps

For Suction Pipe to Machines

Fig. No.	Pipe Size, Inches	No.	Price
983	$1\frac{1}{4}$	3056	11.20
983	$1\frac{1}{2}$	4298	13.30
984-5	$2-2\frac{1}{2}$	4295	28.00
984-5	$3-3\frac{1}{2}-4$	4442	58.80
984-5	5-6	4453	100.00
984-5	7-8	4517	140.00
984-5	10	4515	175.00

Screwed Ammonia Fittings



Fig. 986

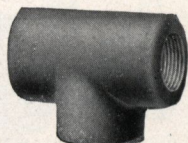


Fig. 987

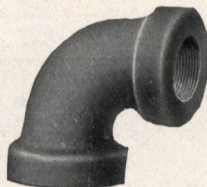


Fig. 988

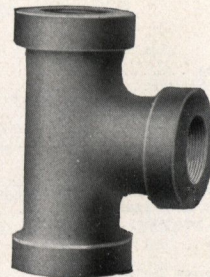


Fig. 989

Short Pattern, Small Sizes, $\frac{1}{4}$ -1-inchLong Sweep Pattern, $1\frac{1}{4}$ -6-inch

Elbows

Short Pattern—Small Sizes

Tees

Size, inches.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	Size, inch.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1
Center to Face, inches.....	1	1	$1\frac{1}{8}$	$1\frac{3}{8}$	$1\frac{3}{4}$	Center to Face, inches.....	1	1	$1\frac{1}{8}$	$1\frac{3}{8}$	$1\frac{3}{4}$
Elbows, each.....	.20	.24	.32	.40	.50	Tees, each.....	.32	.40	.50	.56	.64

Long Sweep

Size, inches.....	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	5	6
Center to Face, inches.....	$3\frac{1}{2}$	$3\frac{3}{4}$	$4\frac{1}{2}$	$5\frac{1}{4}$	$5\frac{3}{4}$	$6\frac{1}{4}$	$6\frac{1}{2}$	$7\frac{1}{4}$	8
Elbows, each.....	.80	1.00	1.40	2.10	2.80	4.00	4.80	8.00	10.00
Tees, each.....	.90	1.10	1.50	2.40	3.20	4.80	6.00	8.80	12.80

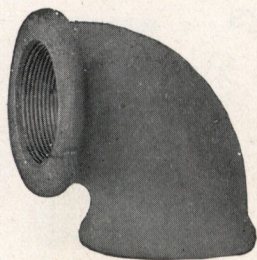


Fig. 990. 90° Elbow

Ammonia Fittings—Screwed

Ammonia Elbows

Screwed

List prices are for straight sizes
For reducing sizes add 15 per cent



Fig. 991. 45° Elbow

Ammonia Elbows—Screwed

Size, inches.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2
Center to Face, 90°, inches.....	1	1 1/8	1 5/16	1 1/2	1 13/16	2 1/8	2 1/2
Center to Face, 45°, inches.....	1	1 1/4	1 1/4	1 13/32	1 11/16	1 27/32	2 1/16
Elbows, 90°, each.....	.35	.45	.55	.65	.75	1.00	1.25
Elbows, 45°, each.....	.45	.55	.65	.75	.90	1.20	1.50

Size, inches.....	2	2 1/2	3	3 1/2	4	5	6
Center to Face, 90°, inches.....	2 7/8	3 1/4	3 5/8	4	4 3/8	5 1/4	6 1/4
Center to Face, 45°, inches.....	2 7/16	2 17/32	2 33/32	3	3 7/32	3 3/4	4 9/32
Elbows, 90°, each.....	1.60	2.75	4.00	5.50	7.00	11.50	17.75
Elbows, 45°, each.....	2.00	3.25	4.75	6.50	8.25	13.00	18.75

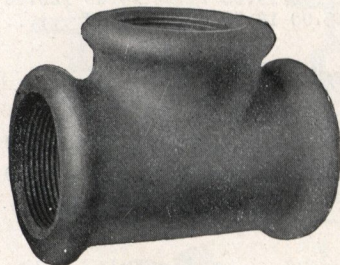


Fig. 992. Tee

Ammonia Tees
and Crosses

Screwed

List prices are for straight sizes, For reducing
sizes add 15 per cent.

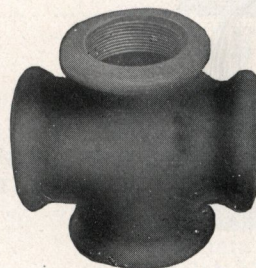


Fig. 993. Cross

Ammonia Tees—Screwed

Size, inches.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
Center to Face, inches.....	1	1 1/8	1 5/16	1 1/2	1 13/16	2 1/8	2 1/2	2 7/8	3 1/4	3 5/8	4	4 3/8	5 1/4	6 1/4
Tees, each.....	.55	.65	.80	.90	1.10	1.45	1.90	2.45	4.00	6.00	8.00	10.00	15.00	22.00

Ammonia Crosses—Screwed

Size, inches.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
Face to Face, inches.....	2	2 1/4	2 5/8	3	3 5/8	4 1/4	5	5 3/4	6 1/2	7 1/4	8	8 3/4	10 1/2	12 1/2
Crosses, each.....	.75	.90	1.10	1.25	1.50	2.00	2.60	3.35	5.00	7.00	8.75	10.25	15.00	22.50

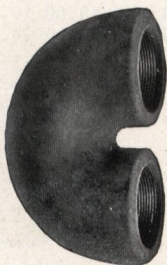


Fig. 994. Solid Return Bend

Solid and Split Ammonia
Return Bends

Screwed



Fig. 995. Split Return Bend

Ammonia Return Bends, Solid—Screwed

Size, inches.....	1	1	1	1	1	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/2	1 1/2	1 1/2
Center to Center, inches.....	1 3/4	2 1/2	3	4	6	2 1/2	3	4	5	6	3	4	6
Solid Bends, each.....	.80	.85	.90	1.00	1.25	1.05	1.10	1.20	1.40	1.60	1.20	1.40	1.80

Size, inches.....	2	2	2	2	2	2 1/2	3	3 1/2	4	4
Center to Center, inches.....	3 1/2	4	4 3/4	6	8	6	6	3 1/2	4	4
Solid Bends, each.....	1.50	1.60	1.75	2.00	2.50	3.50	4.50	6.00	10.00	11.00

Ammonia Return Bends, Split—Screwed

Size, inches.....	1	1	1	1 1/4	1 1/4	1 1/4	1 1/2	1 1/2	2	2	2	2 1/2	3
Center to Center, inches.....	3	4	6	3	4	5	6	4	6	3 1/2	4	6	6
Split Bends, each.....	1.35	1.45	1.65	1.60	1.80	2.00	2.25	2.25	2.60	2.70	2.90	3.50	7.50

Gland End Ammonia Valves and Fittings

Gland End Valves

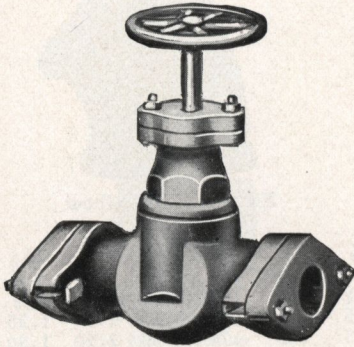


Fig. 1000. Gland End Globe Valve

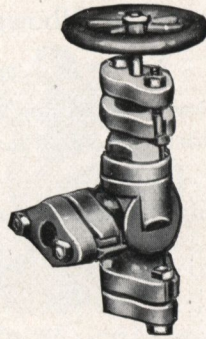


Fig. 1001. Gland End Angle Valve

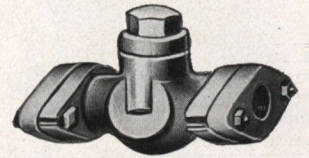


Fig. 1002. Gland End Check Valve

Gland End Globe, Angle and Check Valves

Size.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	5
Globe Valve.....	3.00	4.00	5.00	6.50	8.00	9.00	11.80	17.00	22.00	29.00	75.00	94.00	122.00
Angle Valve.....	3.00	4.00	5.00	6.50	8.00	9.00	11.80	17.00	22.00	29.00	75.00	94.00	122.00
Check Valve.....	2.15	3.00	3.50	4.50	7.50	8.50	9.50	10.25	15.00	18.50	60.00	70.00	.....

Fig. 1003
Needle Ex-
pansion Valve

Needle Expansion Valves—Globe and Angle

Size.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$
Globe or Angle, each.....	4.50	6.00	7.50	9.75	12.00	13.50	17.70
Lock Shield Expansion Valve (not illustrated), $\frac{1}{2}$ inch size only, Globe or Angle, each.....	8.50						

Ammonia Fittings—Gland End



Fig. 1004. Gland End Elbow

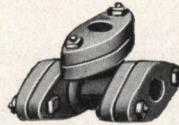


Fig. 1005. Gland End Tee

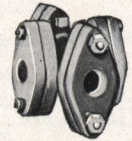


Fig. 1006. Gland End Cross

Gland End Elbows, Tees and Crosses

Size.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	5
Elbows, each.....	.50	.65	.80	1.05	1.60	2.15	3.05	4.20	6.80	11.00	12.00	14.00	20.25
Elbows, Reducing, each.....	.70	.90	1.05	1.40	2.10	2.70	3.80	5.35	8.30	13.50	15.00	18.00	25.00
Tees, each.....	.75	1.05	1.20	1.55	2.50	3.00	4.40	7.75	11.00	15.50	18.00	19.00	25.00
Tees, Reducing, each.....	.95	1.30	1.55	2.05	3.25	3.75	5.40	9.75	13.25	18.75	22.00	24.00	30.00
Crosses, each.....	...	1.50	1.80	2.30	4.00	5.00	...	...	...	...	...	...	...
Crosses, Reducing, each.....	...	1.75	2.25	3.00	5.00	6.00	...	...	...	...	...	...	...

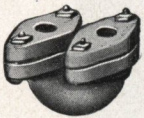


Fig. 1007

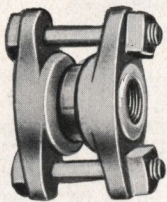
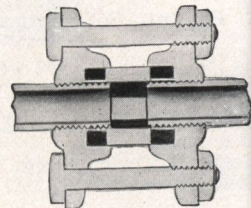
Gland End Return Bends

Size.....	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{1}{2}$	2	2	$2\frac{1}{2}$	3	4
Center to Center.....	$2\frac{1}{2}$	$3\frac{1}{2}$	$3\frac{3}{4}$	$3\frac{3}{4}$	$4\frac{1}{4}$	$5\frac{1}{8}$	$4\frac{1}{4}$	$5\frac{1}{4}$	$5\frac{1}{4}$	$6\frac{1}{2}$
Complete, each.....	1.50	2.00	3.00	5.00	5.00	6.20	6.20	7.50	9.50	16.75

Boyle Ammonia Unions

In the "Boyle" Union the pipe is screwed into the gland and the joint made by compressing the rubber rings around the pipe and thimble ends by the tightening of the bolts.

For reducing sizes add 50 per cent to list.

Fig. 1008
"Boyle" Union

Boyle Unions

Size.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Number of Bolts.....	2	2	2	2	2	2	2	3	4	4	4	4
Complete, each.....	.38	.53	.68	.90	1.20	1.50	2.15	2.80	4.80	6.20	9.00	12.00

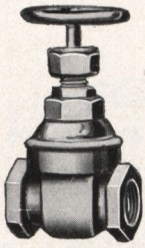


Fig. 1010
Screwed Gate Valve

Ammonia Gate Valves

Semi-Steel, Babbitt Metal Seats
300 Pounds Test

Sizes $2\frac{1}{2}$ and larger have bolted bonnet. Sizes $4\frac{1}{2}$ and larger have bolted stuffing box.

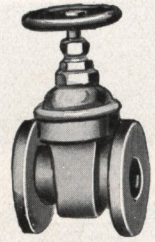


Fig. 1011
Flanged Gate Valve

Ammonia Gate Valves

Size.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6
Face to Face, Screwed....	$2\frac{3}{4}$	$3\frac{3}{8}$	$3\frac{7}{8}$	$4\frac{1}{4}$	$4\frac{3}{4}$	$5\frac{3}{4}$	$6\frac{5}{8}$	$7\frac{1}{2}$	$8\frac{3}{8}$	$9\frac{5}{8}$	$9\frac{3}{4}$	$10\frac{1}{4}$	$11\frac{3}{8}$
Face to Face, Flanged....	$3\frac{1}{4}$	$3\frac{5}{8}$	$4\frac{1}{4}$	$4\frac{3}{4}$	$5\frac{1}{4}$	$5\frac{7}{8}$	$7\frac{7}{8}$	$8\frac{1}{4}$	$8\frac{7}{8}$	$9\frac{3}{8}$	$10\frac{1}{4}$	$9\frac{5}{8}$	$10\frac{7}{8}$
Screwed, each.....	3.25	3.65	4.35	5.00	6.10	7.85	11.10	15.50	18.60	21.50	26.50	31.25	40.00
Flanged, each.....	3.70	4.20	5.00	5.75	7.00	8.85	11.70	15.85	19.50	22.25	26.75	31.25	40.00

All Iron Standard Valves for Pressures to 100 Pounds

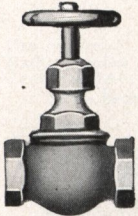


Fig. 1012
Globe Valve



Fig. 1013
Angle Valve

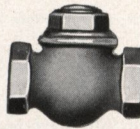


Fig. 1014
Horizontal Check Valve

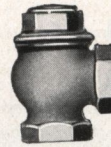


Fig. 1015
Angle Check Valve

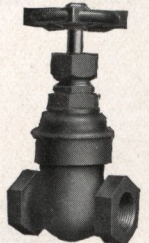


Fig. 1016
All Iron Gate Valve

Standard All Iron Valves

Size.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6
Globe or Angle, Screwed.....	3.25	3.50	4.00	4.40	5.00	6.00	12.00	14.25	17.50	20.00	26.00	27.00	33.25
Globe or Angle, Flanged.....	4.10	4.25	4.75	5.15	6.00	7.25	13.50	15.50	18.75	21.75	27.75	29.00	35.50
Check Valves, Horizontal, Angle, Vertical, Screwed.....	3.25	3.25	3.50	3.75	4.00	4.75	9.00	12.00	.....	.....	.....	.....	.....
Check Valves, Horizontal, Angle, Vertical, Flanged.....	4.00	4.00	4.25	4.50	5.00	6.00	11.00	14.00	.....	.....	.....	.....	.....
Fig. 1016. Gate Valve, Screwed.....	2.00	2.35	2.50	3.50	5.00	7.50	.....	.....	.....	.....	.....	.....	.....

All Iron Asbestos Packed Ammonia Cocks

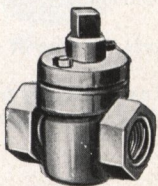


Fig. 1017
Screwed, $\frac{1}{4}$ to 2 inch

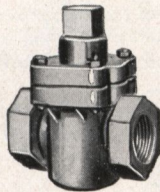


Fig. 1018
Screwed, $2\frac{1}{2}$ to 4 inch

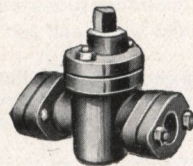


Fig. 1019
Gland End, $\frac{1}{4}$ to 2 inch

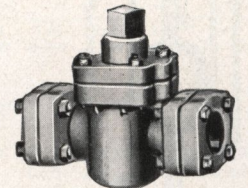


Fig. 1019A
Gland End, $2\frac{1}{2}$ to 3 inch

Asbestos Packed Ammonia Cocks

Screw End Ammonia Cocks

Size.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Each.....	1.40	1.50	1.60	2.10	2.50	3.50	4.75	7.00	12.00	18.00	27.00	30.00
End to end.....	$3\frac{1}{4}$	$3\frac{3}{4}$	$3\frac{3}{4}$	$4\frac{1}{8}$	$4\frac{3}{4}$	$5\frac{3}{8}$	$5\frac{7}{8}$	$6\frac{7}{8}$	$7\frac{3}{4}$	10	$10\frac{1}{2}$	$13\frac{5}{8}$

Gland End Ammonia Cocks

Size.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Each.....	2.10	2.25	2.45	3.10	3.65	4.75	6.10	8.65	15.50	23.00	.....	.....
End to end of body.....	$3\frac{3}{8}$	$3\frac{3}{8}$	$3\frac{7}{8}$	$4\frac{1}{4}$	$4\frac{7}{8}$	$5\frac{5}{8}$	$6\frac{1}{4}$	$7\frac{1}{8}$	$8\frac{3}{4}$	$10\frac{3}{4}$	.....	.....

Ammonia Couplings

Extra Heavy Wrought Iron

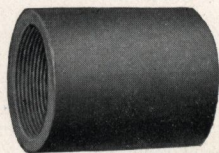


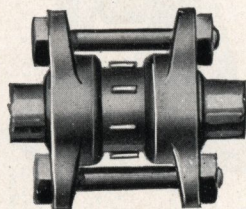
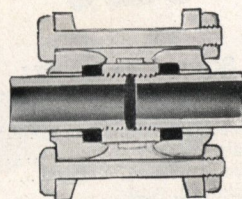
Fig. 1020

Size.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Each.....	.24	.30	.30	.42	.48	.60

Gland End Couplings

In the Gland End Ammonia Coupling the pipe is screwed directly into the body of the fitting, reinforced with Gum Ring, Gland and Follower, as in the Standard Nason Joint. Furnished with Right and Left Thread, unless ordered otherwise.

Not made in Reducing Sizes.

Fig. 1022
Gland End Coupling

Section

Gland End Couplings

Size.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Number of Bolts.....	2	2	2	2	2	2	2	3	4	4	4	4
Complete, each.....	.38	.53	.68	.90	1.20	1.50	2.15	2.80	4.80	6.20	9.00	12.00

Standard Can Dogs

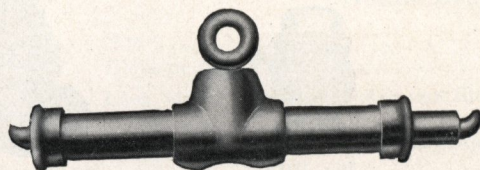


Fig. 1023. Style C

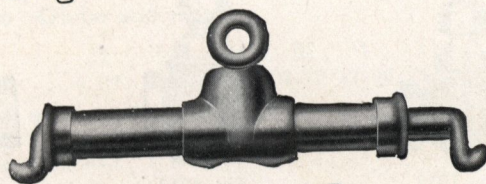


Fig. 1024. Style D

Standard Can Dogs

With steel body, drop forged ball and socket swivel, malleable plungers actuated by bronze spring, and thoroughly hot dipped galvanized, making an exceedingly strong dog that will not rust.

In ordering, give inside width of cans between holes, and if holes in cans are less than $\frac{3}{4}$ inch, give exact diameter.

List Price, Style C.....	5.00	List Price, Style D.....	5.50
--------------------------	------	--------------------------	------

Automatic Ice Can Fillers

These Fillers are wholly automatic in their operation, and are guaranteed to fill within $\frac{1}{8}$ inch of the height at which they are set.

With a reliable Ice Can Filler, cans are accurately and evenly filled, and each block of ice is uniform and of correct weight.

Water is admitted at the bottom and center of the can, preventing the admission of air, thereby reducing to a minimum the "core" usually found in can ice.

Saves distilled water and salt—no overflowing into the brine tank, and saves the cost of one man's time.

In ordering give all inside dimensions of cans at top and bottom, depth of can, distance from top of cans to top of covers when in proper position, size of hose and depth of water usually carried in cans, and the water pressure.

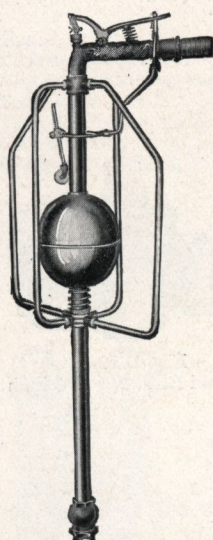


Fig. 1025

Ice Can Fillers

Pounds Capacity	Size Hose	Price Each	Pounds Capacity	Size Hose	Price Each
200	$\frac{3}{4}$ -1	27.00	300	$1\frac{1}{2}$	39.00
300	$\frac{3}{4}$ -1	31.00	400	$1\frac{1}{2}$	44.00
200	$1\frac{1}{4}$	30.00	500	$1\frac{1}{2}$	49.00
300	$1\frac{1}{4}$	34.00	300	2	46.00
400	$1\frac{1}{4}$	38.00	400	2	52.00
200	$1\frac{1}{2}$	34.00	500	2	58.00
Cans less than 6 inches wide, $\frac{3}{4}$ or 1 inch hose, each... 28.00					

Brass Brine Cocks

Size.....	1	$1\frac{1}{4}$
Each.....	3.50	6.00

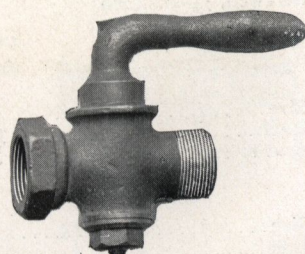


Fig. 1026. Brine Cock

Ammonia Return Bends

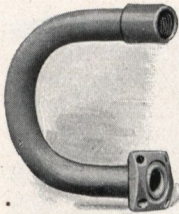


Fig. 1030

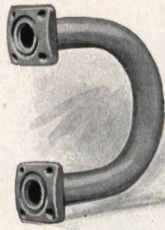


Fig. 1031

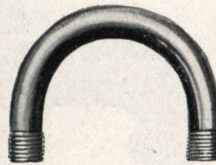


Fig. 1032

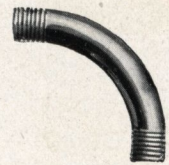


Fig. 1033

Ammonia Return Bends, Fig. 1030-1031

Pipe Size, inches.....	1	1	1	1 1/4	1 1/4	1 1/4	1 1/2	1 1/2	1 1/2	1 1/2	2	2	2	2	2
Center to Center, inches.....	6	8	12	6	8	12	8	12	15	18	10	12	15	18	24
Back to End of Pipe, inches.....	10 3/4	12	14	11	12	14	13	15	16 1/2	18	13 1/2	14	17	18 1/2	21 1/2
Fig. 1030, each.....	2.20	2.30	2.40	2.40	2.50	2.60	3.00	3.20	3.40	3.60	4.00	4.20	4.40	4.60	4.80
Fig. 1031, each.....	2.10	2.20	2.30	2.30	2.40	2.50	2.80	3.00	3.20	3.40	3.80	4.00	4.20	4.40	4.60
Fig. 1031, Soldered, each.....	2.20	2.30	2.40	2.40	2.50	2.60	3.00	3.20	3.40	3.60	4.00	4.20	4.40	4.60	4.80

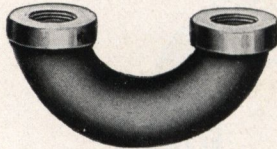
Extra Heavy Iron Pipe Return Bend, Fig. 1032

Size, inches.....	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Center to Center, inches.....	2	3	5	7	9	12	16	24	28	32
Height Over All, inches.....	5 1/2	6	7 1/2	10	11	13 1/2	17 1/2	18	20	22

Extra Heavy Iron Pipe Quarter Bend—Fig. 1033

Size, inches.....	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Radius, inches.....	1	1 1/2	2 1/2	3 1/2	4 1/2	6	8	12	14	16
Center to End, inches.....	5	5 1/2	7	9	10	12	16	16	18	20

These Bends are made to order and are quoted only on specification, covering quantity, size and dimensions.

Fig. 1034
Cast Iron Return Bend

Wide Pattern Return Bends

For Brine Systems—Fig. 1034 Tested to 100 Pounds

Size, inches.....	1	1	1	1 1/4	1 1/4	1 1/2	2
Centers, inches.....	3 1/2	4	6	4	6	7	6
Plain, each.....	.35	.38	.50	.45	.60	.75	.90
Galvanized, each.....	.70	.76	1.00	.90	1.20	1.50	1.80

Special Wide Pattern Brine Return Bends

Size, inches.....	1 1/4	1 1/4	1 1/4	1 1/4	2	2	2
Bend No.....	4107	1053	4551	222	223	4522	4521
Centers, inches.....	2 1/2	4	5	6	8	4	6
Price, each.....	.80	.90	1.00	1.10	1.40	1.00	1.20

In ordering "Special" Bend, please specify the number.

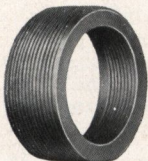


Fig. 1035

Steel Ammonia Bushings

Size.....	1x1 1/2	1 1/4x1 1/2	1 1/4x1	1 1/2x1 1/2	2x1 1/2	2x1	2x1 1/4	2x1 1/2	2 1/2x1 1/2	2 1/2x1	2 1/2x1 1/4	2 1/2x2
Each.....	.40	.52	.52	.60	1.00	1.00	1.00	1.00	1.40	1.40	1.40	1.40
Size.....	3x1 1/2	3x1	3x1 1/4	3x1 1/2	3x2	3x2 1/2	4x1 1/2	4x1	4x1 1/4	4x1 1/2	4x2	4x2 1/2
Each.....	1.60	1.60	1.60	1.60	1.60	1.60	2.40	2.40	2.40	2.40	2.40	2.40
Size.....	4x3 1/2	5x1 1/4	5x1 1/2	5x2	5x3	5x4	6x2	6x3	6x4	6x5	7x3	7x5
Each.....	2.40	3.60	3.60	3.60	3.60	3.60	5.00	5.00	5.00	5.00	6.80	6.80
Size.....	7x6	8x6	8x7	9x8								
Each.....	6.80	8.00	8.00	10.00								

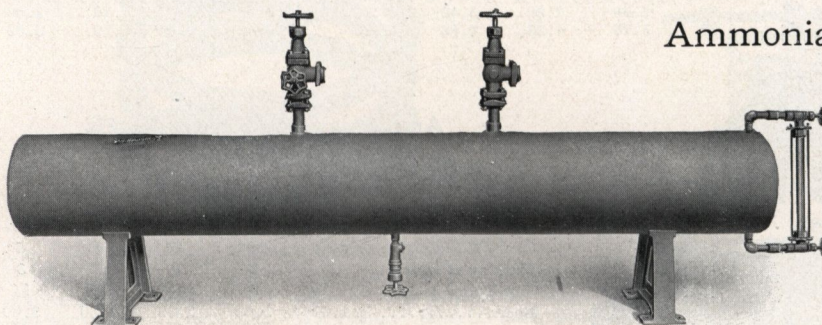


Fig. 1036. Ammonia Receiver

Ammonia Receivers

Made of best flange steel with welded shell and heads and furnished under a guaranteed test of 300 pounds air under water.

Standard Sizes, Inches

12 x 48	20 x 120
12 x 72	20 x 192
12 x 96	24 x 168
16 x 84	24 x 192
20 x 84	

Receivers quoted on specification as to size and trimmings required.

Stands for Ammonia Receivers

Diameter, inches.....	12	12	16	20	24
Height to Center, inches.....	18	18 3/8	20 3/8	22	24 1/2
Price, each.....	2.90	2.40	2.40	4.20	4.20

Ammonia Return Bends

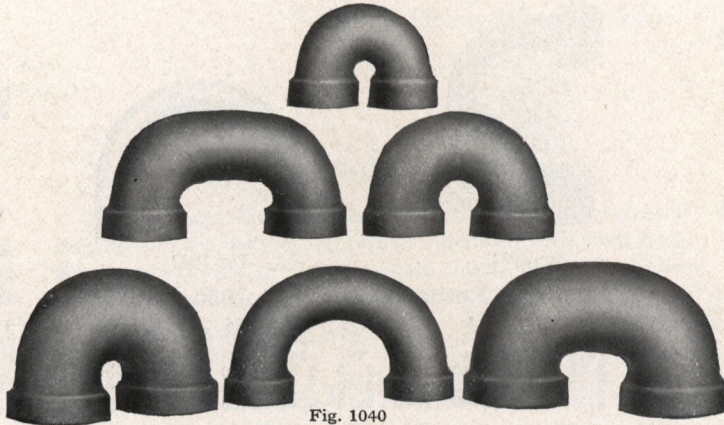


Fig. 1040

Ammonia Return Bends—Screwed

Size, inches.....	1	1	1	1¼	1¼	1¼	1¼	2	2	2	2	2
No. of Bend.....	2570	2571	4103	2572	2573	2574	4208	2328	2645	4209	4210	4211
Center to Center, inches.....	3	4	6	3	4	6	8	4	6	8	10	12
Price, each.....	.70	.80	.90	.70	.90	1.10	1.30	1.20	1.50	2.00	2.30	2.60

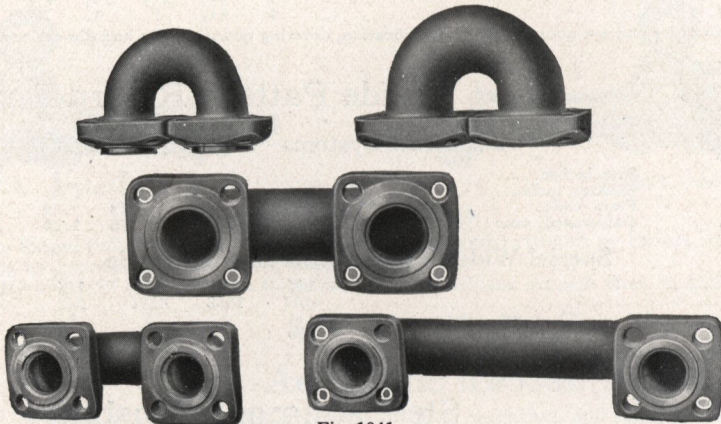


Fig. 1041

Ammonia Return Bends—Flanged

Size, inches.....	1¼	1¼	1¼	1¼	2	2	2	2	2
No. of Bend.....	2322	2949	....	....	2737	2453	2546	2547	4552
Center to Center, inches.....	4	6	8	10	12	4½	6	8	10
Number of Bolts.....	4	4	4	4	4	4	4	4	4
Size of Bolts, inches.....	½ x 2¾	½ x 2¾	½ x 2¾	½ x 2¾	½ x 2¾	5⁄8 x 3½	5⁄8 x 3½	5⁄8 x 3½	5⁄8 x 3½
Bends only, each.....	1.70	1.90	2.30	2.80	3.40	1.90	2.10	2.50	3.10
Complete, each.....	3.18	3.38	3.78	4.28	4.88	3.90	4.10	4.50	5.10

Ammonia Split Return Bends
Screw Ends

Size, inches.....	1¼	1¼	1¼	2	2
No.....	2206-7	1654-5	1570-1	2329-30	1303-4
Centers.....	3	4	6	4	6
Number of Bolts..	3	3	3	3	3
Size Bolts, inch...	½	½	½	5⁄8	5⁄8
Each.....	1.40	1.60	2.00	2.80	3.60

When ordering, specify size and number of Bend.

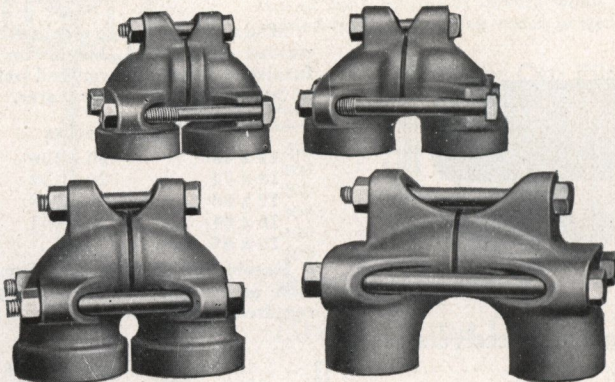


Fig. 1042

Wound or Continuous Coils

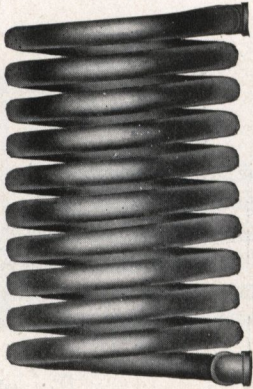


Fig. 1052. Plain Spiral Coil

May be furnished with the ends pointing in any direction desired, also with or without elbows.

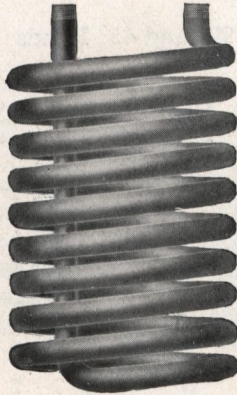


Fig. 1053. Spiral Coil

Made with both ends at the top, but the end which is brought up from the bottom may be turned up either inside or outside the coil.

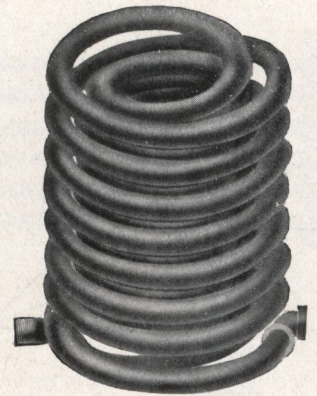


Fig. 1054. Continuous Double Coil

Gives maximum amount of pipe within given outside diameter and height. Consists of left hand and right hand spiral, joined at top, having no screw joints.

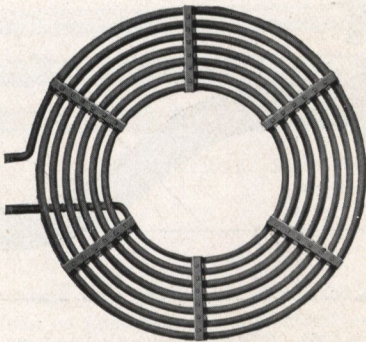


Fig. 1055. Round Flat Coil. Open

Made to go in bottom of round tanks, for heating or cooling purposes. Can also be made for square or oblong tanks, and dished for curved or conical bottoms. The ends may be carried in any direction.

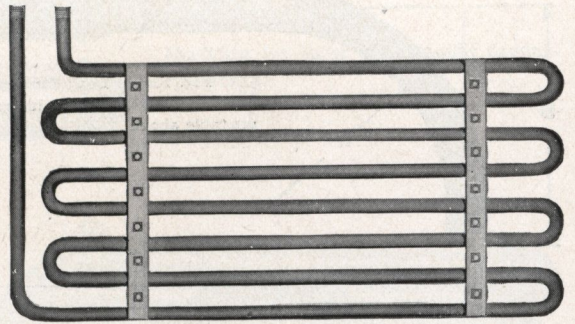


Fig. 1056. Return Bend or Zig Zag Coil

Used largely in refrigerating plants, also for heating coils, with either steam or hot water.

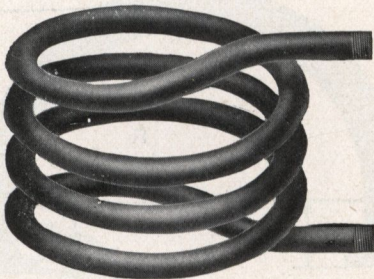


Fig. 1057. Vertical Range Boiler Coil

Made of brass or copper tube, or iron pipe, black or galvanized. Designed for vertical range boilers, as there are no screwed joints inside the boiler. Special coils also supplied for horizontal boilers.

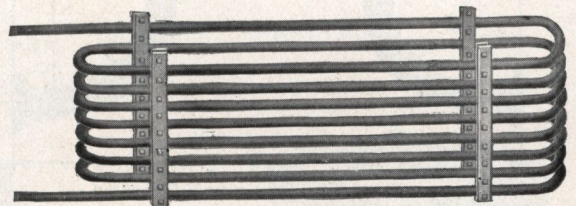


Fig. 1058. Oblong Coil

May be made any length, width or height, with ends round or square with round corners.

These illustrations represent a number of types of wound or continuous coils. We are prepared to quote coils of any practical design in iron and brass pipe and brass and copper tubing.

Orders and inquiries should be accompanied by sketch with full dimensions.

Other types of coils and bends on pages 106 and 107.

Iron Pipe Bends

90° and 45° Bends

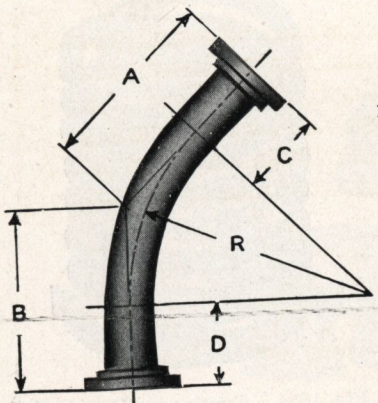


Fig. 1060. 45° Bend

Size Inches	R-Advisable Radius Inches	C and D Inches	A-Center to Face Feet	Inches	B-Center to Face Feet	Inches	**Mini- mum Ra- dius
2½	12½	4	1	4½	0	9¼	7
3	15	4	1	7	0	10¼	8
3½	17½	5	1	10½	1	1¼	10
4	20	5	2	1	1	1¼	12
4½	22½	6	2	4½	1	3¼	14
5	25	6	2	7	1	4¾	15
6	30	7	3	1	1	7½	20
7	35	8	3	7	1	10½	24
8	40	9	4	1	2	1½	28
9	45	11	4	8	2	5¾	35
10	50	12	5	2	2	8¾	40
12	60	14	6	2	3	2¾	50
14	70	16	7	2	3	9	65
15	75	16	7	7	3	11	70
16	80	18	8	2	4	3½	78
18	108	18	10	6	5	2¼	88
20	120	18	11	6	5	7¼	104
22	132	18	12	6	6	8¾	132
24	144	18	13	6	6	5¾	144

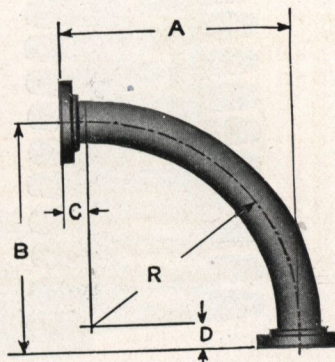


Fig. 1061. 90° Bend

C and D represent minimum length of Straight Pipe required to properly make the Bend.
 **Not guaranteed against buckling. Short Radius Bends should be avoided as far as possible. Sizes larger than 14-inch are outside diameters.

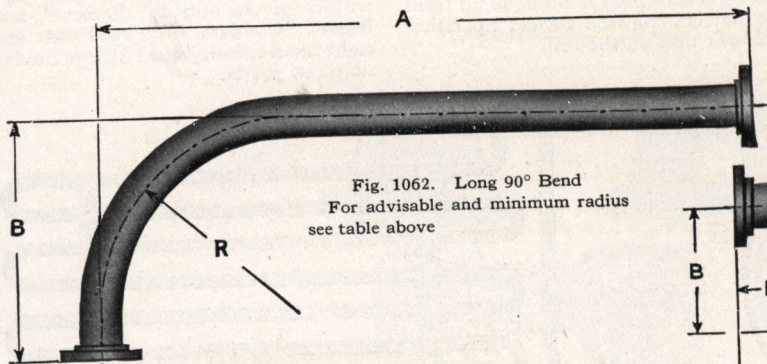


Fig. 1062. Long 90° Bend
 For advisable and minimum radius see table above

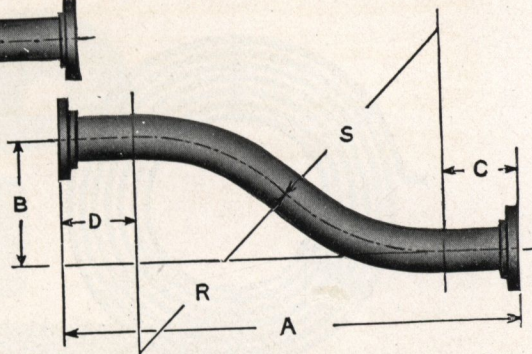


Fig. 1063. Offset Bend with Straight Between Arcs

Size, inches.....	2½	3	3½	4	4½	5	6	7	8	9
R S, inches.....	12½	15	17½	20	22½	25	30	35	40	45
C and D.....	4	4	5	5	6	6	7	8	9	11

B and A to be specified by customer. R S is Advisable Radius, but not minimum.

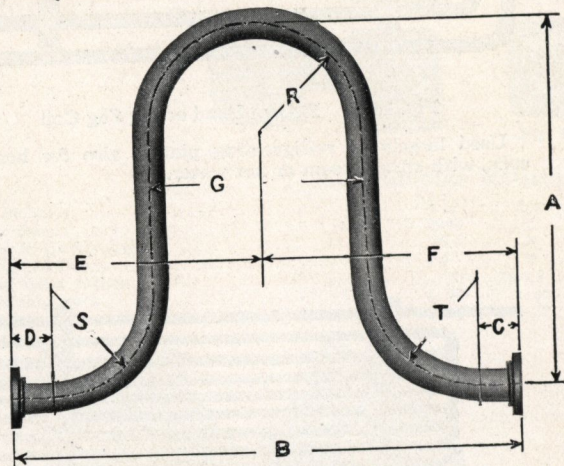


Fig. 1064. Expansion U-Pipe Bend

Size Inches	R S T Advisable Radius Inches	C and D Inches	G ft.	A in.	B ft.	F in.	E ft.	R S T Minimum Radius Inches
2½	12½	4	2	1	2	5	4	7
3	15	4	2	6	2	10	5	8
3½	17½	5	2	9	3	2	6	10
4	20	5	3	4	3	9	7	12
4½	22½	6	3	9	4	3	8	14
5	25	6	4	2	4	8	9	15
6	30	7	5	0	5	7	11	20
7	35	8	5	10	6	6	13	24
8	40	9	6	8	7	5	14	28

*C and D represent minimum length of Straight Pipe required to properly make the Bend.
 Prices quoted on detailed specifications for any style Pipe Bend.

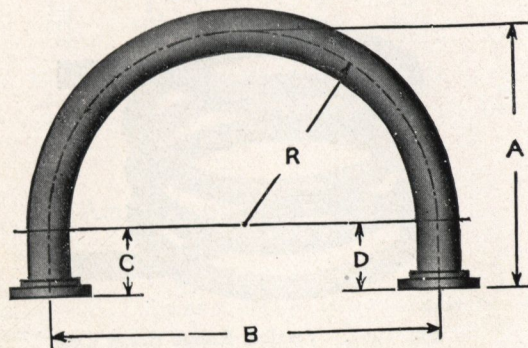


Fig. 1065. U-Pipe Bend

Size, inches.....	2½	3	3½	4	4½	5
R, inches.....	12½	15	17½	20	22½	25
*C and D, inches.....	4	4	5	5	6	6
A, inches.....	16½	19	22½	25	28½	31
B, inches.....	25	30	35	40	45	50

Size, inches.....	6	7	8	9	10	12
R, inches.....	30	35	40	45	50	60
*C and D, inches.....	7	8	9	11	12	14
A, inches.....	37	43	49	56	62	74
B, inches.....	60	70	80	90	100	120

Iron Pipe Coils

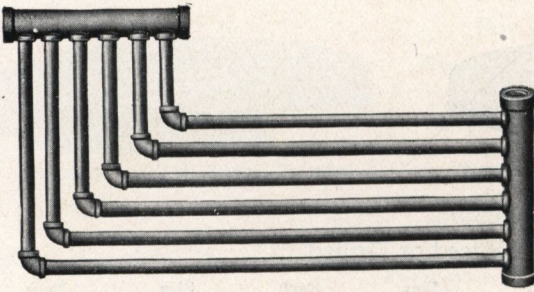


Fig. 1070. Wall or Miter Coil

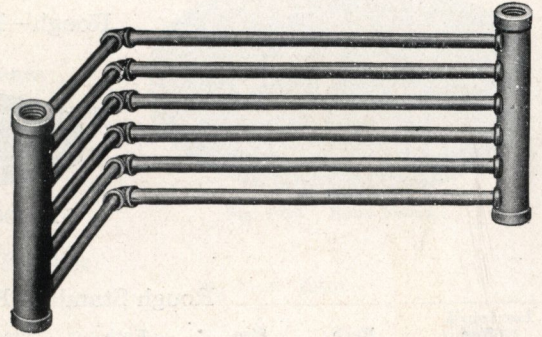


Fig. 1071. Right Angle or Corner Coil

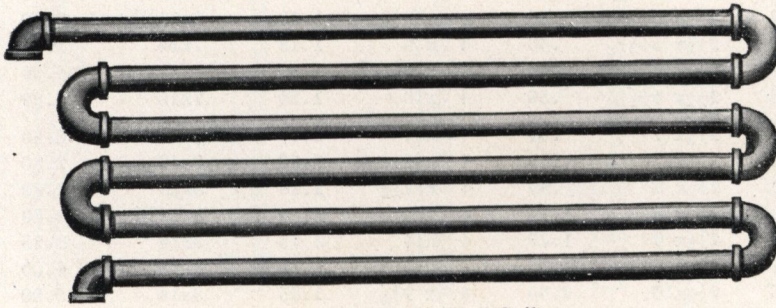


Fig. 1072. Plain Wall Coil

Miter, Corner and Wall Coils can be furnished in any length or height, and shipped knocked down, properly marked for assembling.

Sketches for these coils should accompany orders.

Sketches should also accompany orders for Box Coils. These coils can be furnished in any size and are adapted for conditions calling for the maximum amount of heating surface in a restricted space. Can be shipped knocked down when the weight is greater than can be conveniently handled.

Furnished with Iron Straps when so ordered.

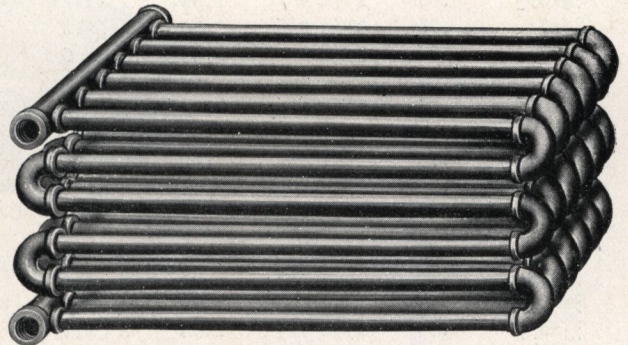


Fig. 1073. Plain Box Coil

Continuous Coils

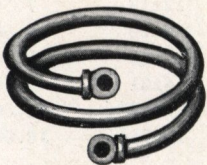


Fig. 1074
Stove Coil



Showing Stove Coil in
Position

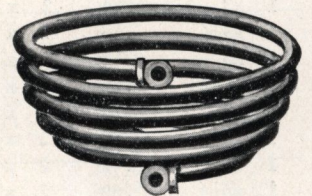


Fig. 1075
Kettle or Basket Coil. Exact
inside line of kettle must be
given if coil is to fit close

Sketches should accompany orders and inquiries for prices for these Coils, showing all dimensions.

Standard Flanges

Rough—Not Faced or Drilled

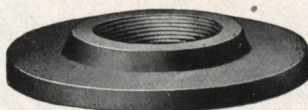


Fig. 1084. Common Flange

Rough Standard Flanges—Not Faced or Drilled

Size	Each	Size	Each	Size	Each	Size	Each	Size	Each
$\frac{3}{8}$ x3	.10	1 x $7\frac{1}{2}$	.90	2 x10	2.15	$3\frac{1}{2}$ x14	4.00	7x12	2.20
$\frac{3}{8}$ x3 $\frac{1}{2}$	.15	1 x 8	1.00	2 x11	2.50	4 x $7\frac{1}{2}$	.90	7x12 $\frac{1}{2}$	2.20
$\frac{3}{8}$ x4	.22	1 x $8\frac{1}{2}$	1.25	2 x12	3.00	4 x 8	.90	7x13	2.80
$\frac{3}{8}$ x4 $\frac{1}{2}$	.25	1 x 9	1.35	2 $\frac{1}{2}$ x 5	.35	4 x $8\frac{1}{2}$	1.00	7x13 $\frac{1}{2}$	2.80
$\frac{3}{8}$ x5	.35	1 $\frac{1}{4}$ x $3\frac{1}{2}$	.16	2 $\frac{1}{2}$ x $5\frac{1}{2}$	.40	4 x 9	1.15	7x14	3.25
$\frac{3}{8}$ x5 $\frac{1}{2}$	.45	1 $\frac{1}{4}$ x 4	.16	2 $\frac{1}{2}$ x 6	.42	4 x $9\frac{1}{2}$	1.50	7x15	4.00
$\frac{3}{8}$ x6	.50	1 $\frac{1}{4}$ x $4\frac{1}{2}$	.25	2 $\frac{1}{2}$ x $6\frac{1}{2}$	.50	4 x10	1.50	7x16	5.00
$\frac{1}{2}$ x2 $\frac{1}{2}$	.10	1 $\frac{1}{4}$ x 5	.30	2 $\frac{1}{2}$ x 7	.62	4 x11	2.00	7x17	6.50
$\frac{1}{2}$ x3	.10	1 $\frac{1}{4}$ x $5\frac{1}{2}$	.40	2 $\frac{1}{2}$ x $7\frac{1}{2}$	.80	4 x12	2.50	8x12	2.80
$\frac{1}{2}$ x3 $\frac{1}{2}$	.15	1 $\frac{1}{4}$ x 6	.40	2 $\frac{1}{2}$ x 8	.90	4 x12 $\frac{1}{2}$	2.20	8x13	2.80
$\frac{1}{2}$ x4	.22	1 $\frac{1}{4}$ x $6\frac{1}{2}$	.60	2 $\frac{1}{2}$ x $8\frac{1}{2}$	1.10	4 x13	3.25	8x13 $\frac{1}{2}$	2.80
$\frac{1}{2}$ x4 $\frac{1}{2}$	.25	1 $\frac{1}{4}$ x 7	.70	2 $\frac{1}{2}$ x 9	1.25	4 x14	3.75	8x14	3.25
$\frac{1}{2}$ x5	.35	1 $\frac{1}{4}$ x $7\frac{1}{2}$	.85	2 $\frac{1}{2}$ x $9\frac{1}{2}$	1.75	4 $\frac{1}{2}$ x 9	1.15	8x15	4.00
$\frac{1}{2}$ x5 $\frac{1}{2}$	.45	1 $\frac{1}{4}$ x 8	.95	2 $\frac{1}{2}$ x10	2.00	4 $\frac{1}{2}$ x $9\frac{1}{4}$	1.25	8x16	5.00
$\frac{1}{2}$ x6	.50	1 $\frac{1}{4}$ x $8\frac{1}{2}$	1.15	2 $\frac{1}{2}$ x11	2.50	4 $\frac{1}{2}$ x $9\frac{1}{2}$	1.25	8x17	6.50
$\frac{1}{2}$ x6 $\frac{1}{2}$	.65	1 $\frac{1}{4}$ x 9	1.35	2 $\frac{1}{2}$ x12	3.00	4 $\frac{1}{2}$ x10	1.50	8x18	8.00
$\frac{1}{2}$ x7	.75	1 $\frac{1}{4}$ x $9\frac{1}{2}$	1.90	2 $\frac{1}{2}$ x13	3.50	4 $\frac{1}{2}$ x11	1.75	8x20	8.50
$\frac{1}{2}$ x7 $\frac{1}{2}$	.90	1 $\frac{1}{4}$ x10	2.25	3 x 6	.50	4 $\frac{1}{2}$ x12	2.50	9x14	3.75
$\frac{1}{2}$ x8	1.00	1 $\frac{1}{2}$ x 4	.19	3 x $6\frac{1}{2}$	.50	4 $\frac{1}{2}$ x12 $\frac{1}{2}$	2.20	9x15	4.00
$\frac{1}{2}$ x8 $\frac{1}{2}$	1.25	1 $\frac{1}{2}$ x $4\frac{1}{2}$	.22	3 x 7	.62	4 $\frac{1}{2}$ x13	3.00	9x16	5.00
$\frac{3}{4}$ x3	.12	1 $\frac{1}{2}$ x 5	.30	3 x $7\frac{1}{2}$	.75	4 $\frac{1}{2}$ x14	3.75	9x17	5.75
$\frac{3}{4}$ x3 $\frac{1}{2}$	.15	1 $\frac{1}{2}$ x $5\frac{1}{2}$	.40	3 x 8	.90	5 x 9	1.40	9x18	8.00
$\frac{3}{4}$ x4	.22	1 $\frac{1}{2}$ x 6	.40	3 x $8\frac{1}{2}$	1.10	5 x $9\frac{1}{2}$	1.50	9x20	8.50
$\frac{3}{4}$ x4 $\frac{1}{2}$	.25	1 $\frac{1}{2}$ x $6\frac{1}{2}$	.55	3 x 9	1.15	5 x10	1.50	10x14	4.00
$\frac{3}{4}$ x5	.30	1 $\frac{1}{2}$ x 7	.70	3 x $9\frac{1}{2}$	1.60	5 x10 $\frac{1}{2}$	1.75	10x15	4.50
$\frac{3}{4}$ x5 $\frac{1}{2}$	.45	1 $\frac{1}{2}$ x $7\frac{1}{2}$	.85	3 x10	1.80	5 x11	1.75	10x16	5.00
$\frac{3}{4}$ x6	.50	1 $\frac{1}{2}$ x 8	.95	3 x11	2.25	5 x12	2.20	10x17	5.75
$\frac{3}{4}$ x6 $\frac{1}{2}$	.60	1 $\frac{1}{2}$ x $8\frac{1}{2}$	1.15	3 x12	3.00	5 x12 $\frac{1}{2}$	2.20	10x18	7.00
$\frac{3}{4}$ x7	.75	1 $\frac{1}{2}$ x 9	1.35	3 x13	3.50	5 x13	3.00	10x19	7.50
$\frac{3}{4}$ x7 $\frac{1}{2}$	.90	1 $\frac{1}{2}$ x $9\frac{1}{2}$	1.90	3 x14	4.00	5 x14	3.50	10x20	8.50
$\frac{3}{4}$ x8	1.00	1 $\frac{1}{2}$ x10	2.25	$3\frac{1}{2}$ x $6\frac{1}{2}$	.65	6 x $9\frac{1}{2}$	1.50	12x16	6.00
$\frac{3}{4}$ x8 $\frac{1}{2}$	1.25	2 x 5	.35	$3\frac{1}{2}$ x 7	.75	6 x10	1.50	12x17	7.00
1 x3	.12	2 x $5\frac{1}{2}$	.35	$3\frac{1}{2}$ x $7\frac{1}{2}$	.85	6 x11	1.75	12x18	7.00
1 x3 $\frac{1}{2}$	.15	2 x 6	.42	$3\frac{1}{2}$ x 8	.90	6 x11 $\frac{1}{2}$	2.20	12x19	7.50
1 x4	.16	2 x $6\frac{1}{2}$	.50	$3\frac{1}{2}$ x $8\frac{1}{2}$	1.00	6 x12	2.20	12x20	8.50
1 x4 $\frac{1}{2}$	.25	2 x 7	.62	$3\frac{1}{2}$ x 9	1.15	6 x12 $\frac{1}{2}$	2.20	14x20	8.50
1 x5	.30	2 x $7\frac{1}{2}$	.80	$3\frac{1}{2}$ x $9\frac{1}{2}$	1.60	6 x13	2.80	14x21	9.50
1 x5 $\frac{1}{2}$	.40	2 x 8	.90	$3\frac{1}{2}$ x10	1.50	6 x13 $\frac{1}{2}$	2.80	15x22 $\frac{1}{4}$	14.00
1 x6	.42	2 x $8\frac{1}{2}$	1.10	$3\frac{1}{2}$ x11	2.25	6 x14	3.25	16x23 $\frac{1}{2}$	18.00
1 x6 $\frac{1}{2}$	.60	2 x 9	1.30	$3\frac{1}{2}$ x12	2.75	6 x16	6.00	.....	.....
1 x7	.75	2 x $9\frac{1}{2}$	1.75	$3\frac{1}{2}$ x13	3.50	7 x11	2.20	.....	.....

Faced and Faced and Drilled, page 109.

Templates for Drilling, page 115.

Gaskets, page 115.

Standard Cast Iron Flanges

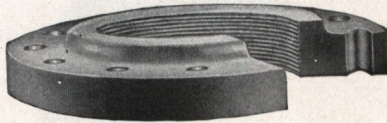


Fig. 1092. Standard Flange, Threaded

For Working Steam
Pressures Up to 125 Pounds

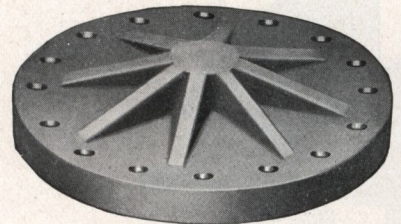


Fig. 1094. Blind Flange

Standard Cast Iron Flanges

Fig. 1092. Threaded

Size, Inches	Faced, Each	Faced and Drilled Each	Bolts for One Joint Per Set	Outside Size Inches	Faced, Each	Faced and Drilled Each
1 x 4	.55	.80	.25	4		
1 1/4 x 4 1/2	.60	.85	.25	4 1/2		
1 1/2 x 5	.65	.90	.25	5		
2 x 6	.75	1.00	.25	6	1.15	1.40
2 1/2 x 7	.85	1.10	.25	7	1.30	1.55
3 x 7 1/2	.95	1.25	.25	7 1/2	1.40	1.70
3 1/2 x 8 1/2	1.20	1.55	.25	8 1/2	1.80	2.15
4 x 9	1.35	1.80	.35	9	2.00	2.45
4 1/2 x 9 1/4	1.45	1.90	.70	9 1/4	2.20	2.65
5 x 10	1.60	2.05	.70	10	2.40	2.85
6 x 11	2.00	2.50	.75	11	3.00	3.50
7 x 12 1/2	2.65	3.25	.75	12 1/2	4.00	4.60
8 x 13 1/2	3.10	3.80	.75	13 1/2	4.60	5.30
9 x 15	3.85	4.65	1.15	15	5.75	6.55
10 x 16	4.50	5.50	1.70	16	6.75	7.75
12 x 19	6.50	7.65	1.70	19	9.75	10.90
14 x 21	9.00	10.35	2.50	21	13.50	14.85
15 x 22 1/4	11.50	13.20	2.50	22 1/4	17.00	18.70
16 x 23 1/2	13.50	15.30	3.30	23 1/2	20.00	21.80
18 x 25	16.00	18.00	5.00	25	24.00	26.00
20 x 27 1/2	19.00	21.50	6.20	27 1/2	28.00	30.50

Fig. 1094. Blind

Standard Cast Iron

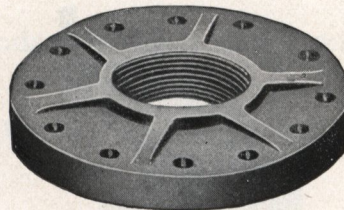


Fig. 1096

Reducing Companion Flanges

Standard Cast Iron Reducing Companion Flanges

Size, Inches	Faced Each	Faced and Drilled Each	Size, Inches	Faced Each	Faced and Drilled Each	Size, Inches	Faced Each	Faced and Drilled Each
1 1/2 x 7	1.45	1.70	4 x 11	3.30	3.80	6 x 19	10.75	11.90
2 x 7	1.45	1.70	4 1/2 x 11	3.30	3.80	7 x 19	10.75	11.90
1 1/2 x 7 1/2	1.55	1.85	5 x 11	3.30	3.80	8 x 19	10.75	11.90
2 x 7 1/2	1.55	1.85	4 x 12 1/2	4.40	5.00	9 x 19	10.75	11.90
2 1/2 x 7 1/2	1.55	1.85	4 1/2 x 12 1/2	4.40	5.00	10 x 19	10.75	11.90
2 x 8 1/2	2.00	2.35	5 x 12 1/2	4.40	5.00	8 x 21	15.00	16.35
2 1/2 x 8 1/2	2.00	2.35	6 x 12 1/2	4.40	5.00	9 x 21	15.00	16.35
3 x 8 1/2	2.00	2.35	2 x 13 1/2	5.10	5.80	10 x 21	15.00	16.35
2 x 9	2.20	2.65	2 1/2 x 13 1/2	5.10	5.80	12 x 21	15.00	16.35
2 1/2 x 9	2.20	2.65	3 x 13 1/2	5.10	5.80	8 x 22 1/4	19.00	20.70
3 x 9	2.20	2.65	4 x 13 1/2	5.10	5.80	10 x 22 1/4	19.00	20.70
3 1/2 x 9	2.20	2.65	5 x 13 1/2	5.10	5.80	12 x 22 1/4	19.00	20.70
2 1/2 x 9 1/4	2.40	2.85	6 x 13 1/2	5.10	5.80	14 x 22 1/4	19.00	20.70
3 x 9 1/4	2.40	2.85	7 x 13 1/2	5.10	5.80	10 x 23 1/2	22.00	23.80
3 1/2 x 9 1/4	2.40	2.85	6 x 15	6.35	7.15	12 x 23 1/2	22.00	23.80
4 x 9 1/4	2.40	2.85	7 x 15	6.35	7.15	14 x 23 1/2	22.00	23.80
2 x 10	2.65	3.10	8 x 15	6.35	7.15	15 x 23 1/2	22.00	23.80
2 1/2 x 10	2.65	3.10	2 1/2 x 16	7.45	8.45	12 x 25	26.50	28.50
3 x 10	2.65	3.10	3 x 16	7.45	8.45	14 x 25	26.50	28.50
3 1/2 x 10	2.65	3.10	3 1/2 x 16	7.45	8.45	15 x 25	26.50	28.50
4 x 10	2.65	3.10	4 x 16	7.45	8.45	16 x 25	26.50	28.50
4 1/2 x 10	2.65	3.10	5 x 16	7.45	8.45	14 x 27 1/2	31.00	33.50
2 x 11	3.30	3.80	6 x 16	7.45	8.45	15 x 27 1/2	31.00	33.50
2 1/2 x 11	3.30	3.80	7 x 16	7.45	8.45	16 x 27 1/2	31.00	33.50
3 x 11	3.30	3.80	8 x 16	7.45	8.45	18 x 27 1/2	31.00	33.50
3 1/2 x 11	3.30	3.80	9 x 16	7.45	8.45			

Template for Drilling, page 115. Gaskets, page 115. Semi-steel at special prices.

Standard Cast Iron Flanged Fittings

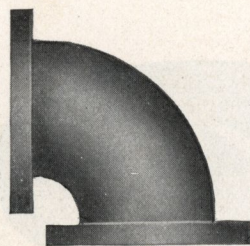


Fig. 1104 Elbow

Flanged Elbows
For Steam Working Pressures
Up to 125 Pounds

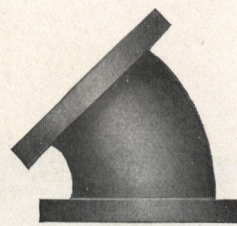


Fig. 1106. 45° Elbow

Standard Flanged Elbows

Fig. 1104					Fig. 1106		
Size, Inches	Faced, Each	Faced and Drilled Each	Center to Face Inches	Diameter of Flanges Inches	Faced, Each	Faced and Drilled Each	Center to Face Inches
2	3.00	3.60	4½	6	3.30	3.90	2½
2½	3.15	3.75	5	7	3.50	4.10	3
3	3.45	4.15	5½	7½	3.80	4.50	3
3½	4.05	4.90	6	8½	4.50	5.35	3½
4	4.50	5.50	6½	9	5.00	6.00	4
4½	5.50	6.50	7	9½	6.00	7.00	4
5	6.25	7.25	7½	10	6.90	7.90	4½
6	7.60	8.90	8	11	8.35	9.65	5
7	10.50	12.00	8½	12½	11.00	12.50	5½
8	12.00	13.60	9	13½	12.60	14.20	5½
9	17.00	19.25	10	15	17.75	20.00	6
10	19.00	21.70	11	16	20.00	22.70	6½
12	28.00	31.00	12	19	29.50	32.50	7½
14	41.50	45.25	14	21	41.50	45.25	7½
15	47.00	51.50	14½	22½	47.00	51.50	8
16	54.50	59.50	15	23½	54.50	59.50	8
18	71.00	77.00	16½	25	71.00	77.00	8½
20	90.00	97.00	18	27½	90.00	97.00	9½

Cast Iron
Standard Reducing
Taper Elbows

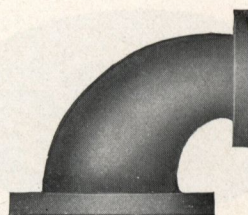


Fig. 1108. Taper Elbow

For Steam Working
Pressures Up to
125 Pounds

Standard Reducing Taper Elbows

Size, Inches	Faced Each	Faced and Drilled Each	Diameter of Flanges Inches	Center to Face Inches	Size, Inches	Faced Each	Faced and Drilled Each	Diameter of Flanges Inches	Center to Face Inches
3 x 1½	6.90	7.60	7½ x 5	5½	8 x 5	24.00	25.60	13½ x 10	9
3 x 2	6.90	7.60	7½ x 6	5½	8 x 6	24.00	25.60	13½ x 11	9
3 x 2½	6.90	7.60	7½ x 7	5½	8 x 7	24.00	25.60	13½ x 12½	9
3½ x 2	8.10	8.95	8½ x 6	6	9 x 6	34.00	36.25	15 x 11	10
3½ x 2½	8.10	8.95	8½ x 7	6	9 x 8	34.00	36.25	15 x 13½	10
3½ x 3	8.10	8.95	8½ x 7½	6	10 x 4½	38.00	40.70	16 x 9½	11
4 x 2	9.00	10.00	9 x 6	6½	10 x 5	38.00	40.70	16 x 10	11
4 x 2½	9.00	10.00	9 x 7	6½	10 x 6	38.00	40.70	16 x 11	11
4 x 3	9.00	10.00	9 x 7½	6½	10 x 7	38.00	40.70	16 x 12½	11
4½ x 2½	11.00	12.00	9¼ x 8½	7	10 x 8	38.00	40.70	16 x 13½	11
4½ x 3½	11.00	12.00	9¼ x 9	7	10 x 9	38.00	40.70	16 x 15	11
4½ x 4	11.00	12.00	9¼ x 9	7	12 x 6	56.00	59.00	19 x 11	12
5 x 2½	12.50	13.50	10 x 7	7½	12 x 7	56.00	59.00	19 x 12½	12
5 x 3	12.50	13.50	10 x 7½	7½	12 x 8	56.00	59.00	19 x 13½	12
5 x 4	12.50	13.50	10 x 9	7½	12 x 10	56.00	59.00	19 x 16	12
6 x 2½	15.25	16.55	11 x 7	8	12 x 10	70.00	73.75	21 x 16	14
6 x 3	15.25	16.55	11 x 7½	8	14 x 12	70.00	73.75	21 x 19	14
6 x 3½	15.25	16.55	11 x 8½	8	15 x 10	80.00	84.50	22¼ x 16	14½
6 x 4	15.25	16.55	11 x 9	8	15 x 12	80.00	84.50	22¼ x 19	14½
6 x 5	15.25	16.55	11 x 10	8	16 x 12	90.00	95.00	23½ x 19	15
7 x 5	21.00	22.50	12½ x 10	8½	16 x 14	90.00	95.00	23½ x 21	15
7 x 6	21.00	22.50	12½ x 11	8½	16 x 15	90.00	95.00	23½ x 22¼	15
8 x 3½	24.00	25.60	13½ x 8½	9	18 x 15	105.00	111.00	25 x 22¼	16½
8 x 4	24.00	25.60	13½ x 9	9	20 x 18	120.00	117.00	27½ x 25	18

Furnished faced only unless otherwise ordered.

Templates for drilling, page 115. Gaskets, page 115. Dimensions, page 114.

Standard Flanged Cast Iron Fittings



Fig. 1110. Long Radius Elbow

Flanged Elbows

For Steam Working Pressures
Up to 125 Pounds

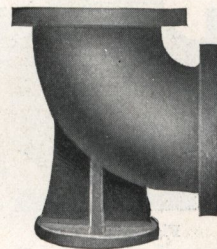


Fig. 1111. Base Elbow

Flanged Elbows

Fig. 1110					Fig. 1111				
Size, Inches	Faced Each	Faced and Drilled Each	Radius Inches	Center to Face Inches	Diameter of Flanges Except Base Flange Inches	Faced Except Base Flange Each	Faced and Drilled Except Base Flange Each	Center to Face of Base Inches	Diameter of Base Flange Inches
2	5.00	5.90	5 1/4	6 1/2	6	.....	.....	5	4 1/2
2 1/2	5.25	6.15	5 3/8	7	7	.....	.....	5 1/2	4 1/2
3	5.75	6.85	6 1/4	7 3/4	7 1/2	.....	.....	5 3/4	5
3 1/2	6.75	8.00	6 3/8	8 1/2	8 1/2	.....	.....	6 1/4	5
4	7.50	9.00	7 3/8	9	9	9.00	10.00	6 1/2	6
4 1/2	9.25	10.75	7 3/4	9 1/2	9 1/4	11.00	12.00	6 3/4	6
5	10.50	12.00	8 1/2	10 1/4	10	12.50	13.50	7	7
6	12.65	14.60	9 3/8	11 1/2	11	15.25	16.55	7 1/2	7
7	17.50	19.75	10 7/8	12 3/4	12 1/2	21.00	22.50	8 3/4	7
8	20.00	22.40	12	14	13 1/2	24.00	25.60	8 3/4	9
9	28.50	31.85	13	15 1/4	15	34.00	36.25	9 1/2	9
10	31.50	35.50	14 1/8	16 1/2	16	38.00	40.70	10	9
12	46.50	51.00	16 1/2	19	19	56.00	59.00	10 1/2	11
14	69.00	74.50	18 7/8	21 1/2	21	70.00	73.75	13 1/2	11
15	78.00	84.75	20	22 3/4	22 1/4	80.00	84.50	14	11
16	91.00	98.50	21 1/4	24	23 1/2	90.00	95.00	14 3/4	11
18	118.00	127.00	23 3/8	26 1/2	25	105.00	111.00	15 1/2	13 1/2
20	150.00	160.00	26	29	27 1/2	120.00	127.00	16 3/4	13 1/2

Standard Flanged Cast Iron Tees

For Steam Working Pressures
Up to 125 Pounds

Same List Price applies to Tees reducing
on Run or Branch

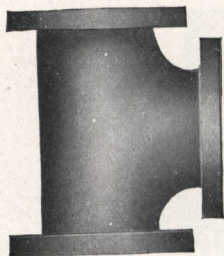


Fig. 1112. Tee

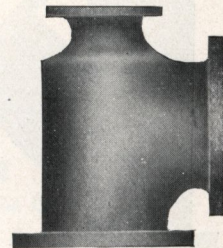


Fig. 1113. Tee, Reducing

Flanged Cast Iron Tees

Fig. 1112				Fig. 1113			
Size, Inches	Faced, each	Faced and Drilled Each	Diameter of Flanges Inches	Center to Face Inches	Face to Face Inches	Faced, each	Faced and Drilled Each
2	4.35	5.25	6	4 1/2	9	5.00	5.90
2 1/2	4.55	5.45	7	5	10	5.25	6.15
3	5.00	6.10	7 1/2	5 1/2	11	5.75	6.85
3 1/2	5.85	7.10	8 1/2	6	12	6.75	8.00
4	6.50	8.00	9	6 1/2	13	7.50	9.00
4 1/2	8.00	9.50	9 1/4	7	14	9.25	10.75
5	9.10	10.60	10	7 1/2	15	10.50	12.00
6	11.00	12.95	11	8	16	12.65	14.60
7	15.25	17.50	12 1/2	8 1/2	17	17.50	19.75
8	17.40	19.80	13 1/2	9	18	20.00	22.40
9	24.65	28.00	15	10	20	28.50	31.85
10	27.50	31.50	16	11	22	31.50	35.50
12	40.50	45.00	19	12	24	46.50	51.00
14	60.00	65.50	21	14	28	69.00	74.50
15	68.00	74.75	22 1/4	14 1/2	29	78.00	84.75
16	79.00	86.50	23 1/2	15	30	91.00	98.50
18	103.00	112.00	25	16 1/2	33	118.00	127.00
20	130.00	140.00	27 1/2	18	36	150.00	160.00

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Standard Flanged Cast Iron Fittings

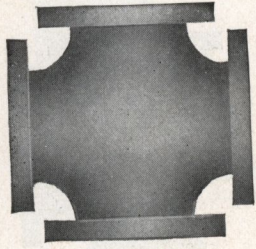


Fig. 1120. Cross

Flanged Crosses

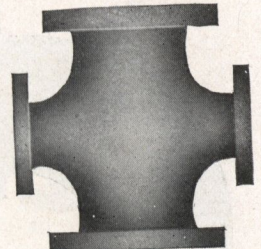
For Steam Working Pressures
Up to 125 Pounds

Fig. 1121. Cross Reducing

Standard Flanged Crosses

Fig. 1120			Fig. 1121		
Size Inches	Faced Each	Faced and Drilled Each	Diameter of Flanges Inches	Center to Face Inches	Face to Face Inches
2	6.75	7.95	6	4½	9
2½	6.95	8.15	7	5	10
3	7.65	9.05	7½	5½	11
3½	9.00	10.70	8½	6	12
4	10.00	12.00	9	6½	13
4½	12.00	14.00	9½	7	14
5	13.75	15.75	10	7½	15
6	16.75	19.25	11	8	16
7	23.00	26.00	12½	8½	17
8	26.50	29.75	13½	9	18
9	37.50	42.00	15	10	20
10	42.00	47.50	16	11	22
12	61.50	67.50	19	12	24
14	91.00	98.50	21	14	28
15	103.00	112.00	22½	14½	29
16	120.00	130.00	23½	15	30
18	157.00	169.00	25	16½	33
20	198.00	212.00	27½	18	36

Standard Flanged Laterals

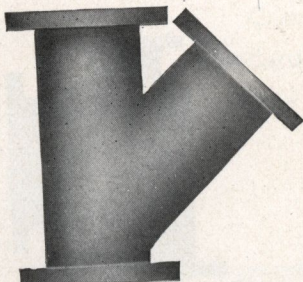
For Steam Working Pressures
Up to 125 Pounds

Fig. 1122. Lateral

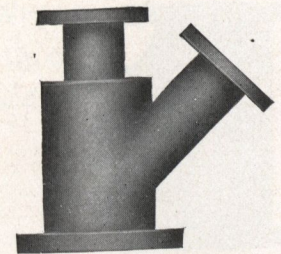


Fig. 1123. Reducing Flanged Lateral

Standard Flanged Laterals, or Y-Branches

Fig. 1122			Fig. 1123		
Size Inches	Faced Each	Faced and Drilled Each	Diameter of Flanges Inches	Center to Face of Run or Outlet Inches	Face to Face Inches
2	6.75	7.95	6	8	10½
2½	6.95	8.15	7	9½	12
3	7.65	9.05	7½	10	13
3½	9.00	10.70	8½	11½	14½
4	10.00	12.00	9	12	15
4½	12.00	14.00	9½	12½	15½
5	13.75	15.75	10	13½	17
6	16.75	19.25	11	14½	18
7	23.00	26.00	12½	16½	20½
8	26.50	29.75	13½	17½	22
9	37.50	42.00	15	19½	24
10	42.00	47.50	16	20½	25½
12	61.50	67.50	19	24½	30
14	91.00	98.50	21	27	33
15	103.00	112.00	22½	28½	34½
16	120.00	130.00	23½	30	36½
18	157.00	169.00	25	32	39
20	198.00	212.00	27½	35	43

Furnished Faced only unless otherwise ordered. Template for Drilling, page 115. Gaskets, page 115. Dimensions, page 114.

Flanged Long Sweep Cast Iron Fittings—Standard

For Steam Pressures to 125 Pounds

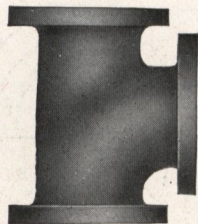


Fig. 1130. Single Sweep Tee

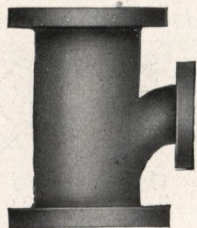


Fig. 1131. Reducing on Branch

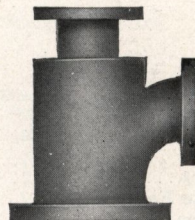


Fig. 1132. Reducing on Run or Branch

Standard Single Sweep Flanged Tees

Size Inches	Diameter Flanges	Center to Face	Face to Face	Fig. 1130		Figs. 1131 and 1132	
				Faced Each	Faced and Drilled Each	Faced Each	Faced and Drilled Each
2	6	4½	9	5.00	5.90	5.75	6.65
2½	7	5	10	5.25	6.15	6.00	6.90
3	7½	5½	11	5.75	6.85	6.60	7.70
3½	8½	6	12	6.75	8.00	7.75	9.00
4	9	6½	13	7.50	9.00	8.65	10.15
4½	9¼	7	14	9.25	10.75	10.60	12.10
5	10	7½	15	10.50	12.00	12.00	13.50
6	11	8	16	12.65	14.60	14.50	16.45
7	12½	8½	17	17.50	19.75	20.00	22.25
8	13½	9	18	20.00	22.40	23.00	25.40
9	15	10	20	28.50	31.85	32.75	36.10
10	16	11	22	31.50	35.50	36.00	40.00
12	19	12	24	46.50	51.00	53.50	58.00
14	21	14	28	69.00	74.50	79.00	84.50
15	22¼	14½	29	78.00	84.75	90.00	96.75
16	23½	15	30	91.00	98.50	105.00	112.50

Standard Double Sweep Flanged Fittings

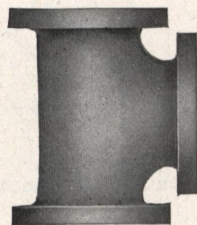


Fig. 1133. Double Sweep Tee

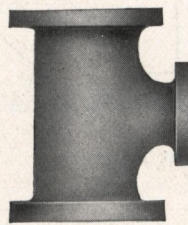


Fig. 1134. Reducing on Branch

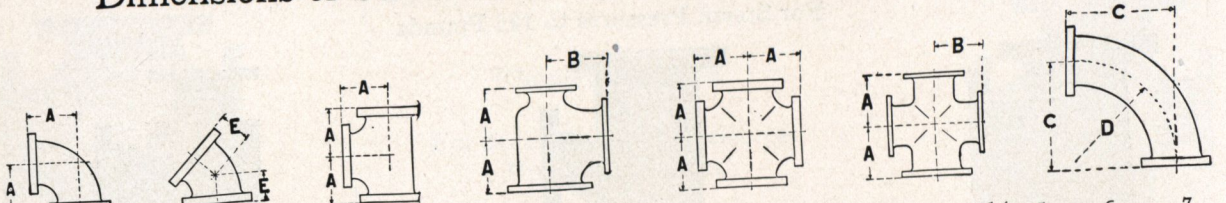
Standard Double Sweep Flanged Tees

Size Inches	Diameter Flange	Center to Face	Face to Face	Fig. 1133		Fig. 1134	
				Faced Each	Faced and Drilled Each	Faced Each	Faced and Drilled Each
2	6	4½	9	5.00	5.90	5.75	6.65
2½	7	5	10	5.25	6.15	6.00	6.90
3	7½	5½	11	5.75	6.85	6.60	7.70
3½	8½	6	12	6.75	8.00	7.75	9.00
4	9	6½	13	7.50	9.00	8.65	10.15
4½	9¼	7	14	9.25	10.75	10.60	12.10
5	10	7½	15	10.50	12.00	12.00	13.50
6	11	8	16	12.65	14.60	14.50	16.45
7	12½	8½	17	17.50	19.75	20.00	22.25
8	13½	9	18	20.00	22.40	23.00	25.40
9	15	10	20	28.50	31.85	32.75	36.10
10	16	11	22	31.50	35.50	36.00	40.00
12	19	12	24	46.50	51.00	53.50	58.00
14	21	14	28	69.00	74.50	79.00	84.50
15	22¼	14½	29	78.00	84.75	90.00	96.75
16	23½	15	30	91.00	98.50	105.00	112.50

Note. Double Sweep Tees are not made Reducing on Run.

Long Sweep Flanged Elbow, page 111. Template for Drilling, page 115. Gaskets, page 115.

Dimensions of Standard Weight Cast Iron Flanged Fittings



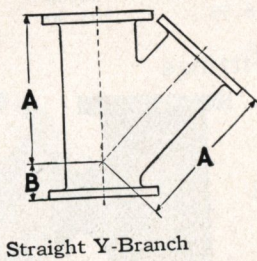
Size, inches.....	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6	7
AA-Face to Face.....	7 1/2	8	9	10	11	12	13	14	15	16	17
A-Center to Face.....	3 3/4	4	4 1/2	5	5 1/2	6	6 1/2	7	7 1/2	8	8 1/2
B-Center to Face.....	3 3/4	4	4 1/2	5	5 1/2	6	6 1/2	7	7 1/2	8	8 1/2
C-Center to Face.....	...	...	5 1/4	5 5/8	6 1/4	6 7/8	7 3/8	7 3/4	8 1/2	9 5/8	10 1/8
D-Radius.....	2	2 1/4	2 1/2	3	3	3 1/2	4	4	4 1/2	5	5 1/2
E-Center to Face.....	...	...	...	...	...	...	...	...	...	...	...

Size, inches.....	8	9	10	12	14	15	16	18	20	22	24
AA-Face to Face.....	18	20	22	24	28	29	30	33	36	40	44
A-Center to Face.....	9	10	11	12	14	14 1/2	15	16 1/2	18	20	22
B-Center to Face.....	9	10	11	12	14	14 1/2	15	16 1/2	18	20	22
C-Center to Face.....	14	15 1/4	16 1/2	19	21 1/2	22 3/4	24	26 1/2	29	31 1/2	34
D-Radius.....	12	13	14 1/8	16 1/2	18 7/8	20	21 1/4	23 5/8	26	28 3/8	30 3/4
E-Center to Face.....	5 1/2	6	6 1/2	7 1/2	7 1/2	8	8	8 1/2	9 1/2	10	11

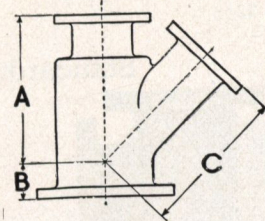
All Reducing Fittings, 1 1/4 inches to 16 inches inclusive, are the same dimensions center to face as straight sizes.

Dimensions of Reducing Sizes 18 Inches and Larger

Size, inches.....	18 and Smaller	20 and Smaller	22 and Smaller	24 and Smaller
Outlets, inches.....	12	14	15	16
AA-Face to Face of Run, inches.....	26	28	28	30
A-Center to Face of Run, inches.....	13	14	14	15
B-Center to Face of Outlets, inches.....	15 1/2	17	18	19



Straight Y-Branch



Reducing Y-Branch
Reducing on Run or Branch

Dimensions of Straight Y-Branched

Size, inches.....	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6	7
Face to Face of Run, inches.....	8	9	10 1/2	12	13	14 1/2	15	15 1/2	17	18	20 1/2
A-Center to Face, inches.....	6 1/4	7	8	9 1/2	10	11 1/2	12	12 1/2	13 1/2	14 1/2	16 1/2
B-Center to Face, inches.....	1 3/4	2	2 1/2	2 1/2	3	3	3	3	3 1/2	3 1/2	4
Size, inches.....	8	9	10	12	14	15	16	18	20	22	24
Face to Face of Run, inches.....	22	24	25 1/2	30	33	34 1/2	36 1/2	39	43	46	49 1/2
A-Center to Face, inches.....	17 1/2	19 1/2	20 1/2	24 1/2	27	28 1/2	30	32	35	37 1/2	40 1/2
B-Center to Face, inches.....	4 1/2	4 1/2	5	5 1/2	6	6	6 1/2	7	8	8 1/2	9

Reducing Y-Branched, 2 inches to 16 inches inclusive, are same dimensions as straight size Y-Branched. For dimensions of Reducing Y-Branched, 18 inches and larger, see following table.

Dimensions of Reducing Sizes 18 Inches and Larger

Size, inches.....	18 and Smaller	20 and Smaller	22 and Smaller	24 and Smaller
Size, Branch, inches.....	9	10	10	12
Face to Face Run, inches.....	26	28	29	32
A-Center to Face of Run, inches.....	25	27	28 1/2	31 1/2
B-Center to Face of Run, inches.....	1	1	1 1/2	1 1/2
C-Center to Face of Branch, inches.....	27 1/2	29 1/2	31 1/2	34 1/2

If the Branch is larger than given in this lower table, use the Straight Dimensions table.
Dimensions of Reducing Flanged Fittings are always regulated by the reduction of the outlet.
Fittings reducing on the Run only are the same dimensions as Straight Fittings.
Drilling Templates, page 115.

Standard Drilling Templates

For Flanged Valves, Flanged Fittings and Flanges—125 Pounds Working Pressure

American Standard in Effect January 1, 1915

Size Inches	Diameter of Flanges	Thickness of Flanges	Bolt Circle	Number of Bolts	Size of Bolts	Length of Bolts
$\frac{3}{4}$	$3\frac{1}{2}$	$\frac{1}{16}$	$2\frac{1}{2}$	4	$\frac{3}{8}$	$1\frac{1}{2}$
1	4	$\frac{1}{16}$	3	4	$\frac{7}{16}$	$1\frac{1}{2}$
$1\frac{1}{4}$	$4\frac{1}{2}$	$\frac{1}{8}$	$3\frac{3}{8}$	4	$\frac{7}{16}$	$1\frac{1}{2}$
$1\frac{1}{2}$	5	$\frac{1}{8}$	$3\frac{7}{8}$	4	$\frac{1}{2}$	$1\frac{3}{4}$
2	6	$\frac{3}{8}$	$4\frac{3}{4}$	4	$\frac{5}{8}$	2
$2\frac{1}{2}$	7	$\frac{1}{2}$	$5\frac{1}{2}$	4	$\frac{5}{8}$	$2\frac{1}{4}$
3	$7\frac{1}{2}$	$\frac{3}{4}$	6	4	$\frac{5}{8}$	$2\frac{1}{2}$
$3\frac{1}{2}$	$8\frac{1}{2}$	$\frac{1}{2}$	7	4	$\frac{5}{8}$	$2\frac{1}{2}$
4	9	$\frac{1}{2}$	$7\frac{1}{2}$	8	$\frac{5}{8}$	$2\frac{3}{4}$
$4\frac{1}{2}$	$9\frac{1}{4}$	$\frac{1}{2}$	$7\frac{3}{4}$	8	$\frac{3}{4}$	3
5	10	$\frac{1}{2}$	$8\frac{1}{2}$	8	$\frac{3}{4}$	3
6	11	1	$9\frac{1}{2}$	8	$\frac{3}{4}$	3
7	$12\frac{1}{2}$	$1\frac{1}{8}$	$10\frac{3}{4}$	8	$\frac{3}{4}$	3
8	$13\frac{1}{2}$	$1\frac{1}{8}$	$11\frac{3}{4}$	8	$\frac{3}{4}$	$3\frac{1}{4}$
9	15	$1\frac{1}{8}$	$13\frac{1}{4}$	12	$\frac{3}{4}$	$3\frac{1}{4}$
10	16	$1\frac{1}{8}$	$14\frac{1}{4}$	12	$\frac{7}{8}$	$3\frac{1}{2}$
12	19	$1\frac{1}{4}$	17	12	$\frac{7}{8}$	$3\frac{3}{4}$
14	21	$1\frac{3}{8}$	$18\frac{3}{4}$	12	1	$4\frac{1}{4}$
15	$22\frac{1}{4}$	$1\frac{3}{8}$	20	16	1	$4\frac{1}{4}$
16	$23\frac{1}{2}$	$1\frac{1}{2}$	$21\frac{1}{4}$	16	1	$4\frac{1}{4}$
18	25	$1\frac{1}{2}$	$22\frac{3}{4}$	16	$1\frac{1}{8}$	$4\frac{3}{4}$
20	$27\frac{1}{2}$	$1\frac{1}{2}$	25	20	$1\frac{1}{8}$	5
22	$29\frac{1}{2}$	$1\frac{1}{2}$	$27\frac{1}{4}$	20	$1\frac{1}{4}$	$5\frac{1}{2}$
24	32	$1\frac{3}{8}$	$29\frac{1}{2}$	20	$1\frac{1}{4}$	$5\frac{1}{2}$
26	$34\frac{1}{4}$	2	$31\frac{3}{4}$	24	$1\frac{1}{4}$	$5\frac{3}{4}$
28	$36\frac{1}{2}$	$2\frac{1}{8}$	34	28	$1\frac{1}{4}$	6
30	$38\frac{3}{4}$	$2\frac{1}{8}$	36	28	$1\frac{3}{8}$	$6\frac{1}{2}$
32	$41\frac{3}{4}$	$2\frac{1}{4}$	$38\frac{1}{2}$	28	$1\frac{1}{2}$	$6\frac{1}{2}$
34	$43\frac{3}{4}$	$2\frac{1}{8}$	$40\frac{1}{2}$	32	$1\frac{1}{2}$	$6\frac{1}{2}$
36	46	$2\frac{3}{8}$	$42\frac{3}{4}$	32	$1\frac{1}{2}$	$6\frac{1}{2}$
38	$48\frac{3}{4}$	$2\frac{3}{8}$	$45\frac{1}{4}$	32	$1\frac{3}{8}$	7
40	$50\frac{3}{4}$	$2\frac{1}{2}$	$47\frac{1}{4}$	36	$1\frac{3}{8}$	7

Gaskets for Standard Flanged Valves, Flanges and Flanged Fittings

For Working Pressures to 125 Pounds

Ring Gaskets						Full Gaskets					
Size Inches	Inside Diameter of Gasket Inches	Outside Diameter of Gasket Inches	Price			Size Inches	Inside Diameter of Gasket Inches	Outside Diameter of Gasket Inches	Price		
			$\frac{1}{16}$ inch Cloth Inserted Each	$\frac{1}{8}$ inch Rainbow Each	Corru- gated Copper Each				$\frac{1}{16}$ inch Cloth Inserted Each	$\frac{1}{8}$ inch Rainbow Each	Corru- gated Copper Each
1	1	$2\frac{1}{2}$	.02	.04	.02	1	1	4	.04	.08	.05
$1\frac{1}{4}$	$1\frac{1}{4}$	$2\frac{3}{8}$	.03	.06	.03	$1\frac{1}{4}$	$1\frac{1}{4}$	$4\frac{1}{2}$	.06	.12	.06
$1\frac{1}{2}$	$1\frac{1}{2}$	$3\frac{1}{4}$	.03	.06	.04	$1\frac{1}{2}$	$1\frac{1}{2}$	5	.06	.12	.07
2	2	4	.03	.08	.05	2	2	6	.08	.16	.10
$2\frac{1}{2}$	$2\frac{1}{2}$	$4\frac{3}{4}$	.04	.10	.06	$2\frac{1}{2}$	$2\frac{1}{2}$	7	.10	.20	.13
3	3	$5\frac{1}{4}$	.05	.12	.07	3	3	$7\frac{1}{2}$	.12	.24	.14
$3\frac{1}{2}$	$3\frac{1}{2}$	$6\frac{1}{4}$	.06	.16	.09	$3\frac{1}{2}$	$3\frac{1}{2}$	$8\frac{1}{2}$	.13	.32	.18
4	4	$6\frac{5}{8}$	.07	.18	.10	4	4	9	.15	.35	.19
$4\frac{1}{2}$	$4\frac{1}{2}$	$6\frac{7}{8}$	.07	.20	.11	$4\frac{1}{2}$	$4\frac{1}{2}$	$9\frac{1}{4}$	.16	.40	.20
5	5	$7\frac{5}{8}$	.08	.24	.12	5	5	10	.18	.48	.23
6	6	$8\frac{5}{8}$	.10	.28	.13	6	6	11	.20	.56	.26
7	7	$9\frac{7}{8}$	.12	.32	.15	7	7	$12\frac{1}{2}$	.25	.64	.32
8	8	$10\frac{7}{8}$	.13	.35	.17	8	8	$13\frac{1}{2}$	.28	.70	.36
9	9	$12\frac{3}{8}$	.16	.40	.23	9	9	15	.35	.80	.46
10	10	$13\frac{1}{4}$	.18	.48	.25	10	10	16	.38	.95	.50
12	12	16	.25	.60	.36	12	12	19	.50	1.20	.65
14	$13\frac{1}{2}$	$17\frac{5}{8}$	.30	.75	.38	14	$13\frac{1}{2}$	21	.55	1.35	.75
15	$14\frac{1}{2}$	$18\frac{7}{8}$	.32	.85	.42	15	$14\frac{1}{2}$	$22\frac{1}{4}$	.65	1.55	.80
16	$15\frac{1}{2}$	$20\frac{1}{8}$	.35	.95	.45	16	$15\frac{1}{2}$	$23\frac{1}{2}$	.70	1.70	.90
18	$17\frac{1}{4}$	$21\frac{1}{2}$	.37	1.10	.50	18	$17\frac{1}{2}$	25	.80	1.90	1.00
20	$19\frac{1}{2}$	$23\frac{3}{4}$	.44	1.20	.55	20	$19\frac{1}{2}$	$27\frac{1}{2}$	.85	2.10	1.10

Ring Gasket covering Face of Flange inside of bolts will be furnished unless otherwise ordered.

Flanged Cast Iron Fittings

Standard Flanged Cast Iron
Taper Reducers
For Steam Working Pressures
Up to 125 Pounds

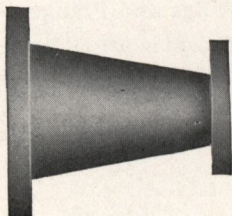


Fig. 1160

Extra Heavy Flanged Cast Iron
Taper Reducers
For Steam Working Pressures
Up to 250 Pounds

Standard Flanged Taper Reducers

Size Inches	Diameter of Flanges Inches	Face to Face Inches	Faced Each	Faced and Drilled Each	Size Inches	Diameter of Flanges Inches	Face to Face Inches	Faced Each	Faced and Drilled Each
3 x2	7½x 6	6	6.90	7.60	10x 4	16 x 9	12	38.00	40.70
3½x2½	8½x 7	6½	8.10	8.95	10x 5	16 x10	12	38.00	40.70
4 x2	9 x 6	7	9.00	10.00	10x 6	16 x11	12	38.00	40.70
4 x2½	9 x 7	7	9.00	10.00	10x 8	16 x13½	12	38.00	40.70
4 x3	9 x 7½	7	9.00	10.00	12x 5	19 x10	14	56.00	59.00
5 x2	10 x 6	8	12.50	13.50	12x 6	19 x11	14	56.00	59.00
5 x2½	10 x 7	8	12.50	13.50	12x 8	19 x13½	14	56.00	59.00
5 x3	10 x 7½	8	12.50	13.50	12x10	19 x16	14	56.00	59.00
5 x4	10 x 9	8	12.50	13.50	14x 6	21 x11	16	70.00	73.75
6 x3	11 x 7½	9	15.25	16.55	14x 8	21 x13½	16	70.00	73.75
6 x3½	11 x 8½	9	15.25	16.55	14x10	21 x16	16	70.00	73.75
6 x4	11 x 9	9	15.25	16.55	14x12	21 x19	16	70.00	73.75
6 x5	11 x10	9	15.25	16.55	15x 8	22½x13½	17	80.00	84.50
7 x3	12½x 7½	10	21.00	22.50	15x10	22½x16	17	80.00	84.50
7 x4	12½x 9	10	21.00	22.50	15x12	22½x19	17	80.00	84.50
7 x5	12½x10	10	21.00	22.50	15x14	22½x21	17	80.00	84.50
7 x6	12½x11	10	21.00	22.50	16x 8	23½x13½	18	90.00	95.00
8 x3	13½x 7½	11	24.00	25.60	16x10	23½x16	18	90.00	95.00
8 x4	13½x 9	11	24.00	25.60	16x12	23½x19	18	90.00	95.00
8 x5	13½x10	11	24.00	25.60	16x14	23½x21	18	90.00	95.00
8 x6	13½x11	11	24.00	25.60	.....	.....	..	.....	.....

Extra Heavy Flanged Taper Reducers

For Working Pressures to 250 Pounds

Size Inches	Face to Face Inches	Faced Each	Faced and Drilled Each	Size Inches	Face to Face Inches	Faced Each	Faced and Drilled Each	Size Inches	Face to Face Inches	Faced Each	Faced and Drilled Each
3 x2	6	10.25	11.35	10x 4	12	57.00	61.00	18x10	19	157.00	166.00
3½x2½	6½	12.25	13.50	10x 5	12	57.00	61.00	18x12	19	157.00	166.00
4 x2	7	13.50	15.00	10x 6	12	57.00	61.00	18x14	19	157.00	166.00
4 x2½	7	13.50	15.00	10x 8	12	57.00	61.00	18x16	19	157.00	166.00
4 x3	7	13.50	15.00	12x 5	14	84.00	88.50	20x12	20	180.00	190.00
5 x2	8	18.75	20.25	12x 6	14	84.00	88.50	20x14	20	180.00	190.00
5 x2½	8	18.75	20.25	12x 8	14	84.00	88.50	20x16	20	180.00	190.00
5 x3	8	18.75	20.25	12x10	14	84.00	88.50	20x18	20	180.00	190.00
5 x4	8	18.75	20.25	14x 6	16	105.00	110.50	22x14	22	225.00	238.00
6 x3	9	22.75	24.75	14x 8	16	105.00	110.50	22x16	22	225.00	238.00
6 x3½	9	22.75	24.75	14x10	16	105.00	110.50	22x18	22	225.00	238.00
6 x4	9	22.75	24.75	14x12	16	105.00	110.50	22x20	22	225.00	238.00
6 x5	9	22.75	24.75	15x 8	17	120.00	127.00	24x16	24	285.00	300.00
7 x3	10	31.50	33.75	15x10	17	120.00	127.00	24x18	24	285.00	300.00
7 x4	10	31.50	33.75	15x12	17	120.00	127.00	24x20	24	285.00	300.00
7 x5	10	31.50	33.75	15x14	17	120.00	127.00	24x22	24	285.00	300.00
7 x6	10	31.50	33.75	16x 8	18	135.00	143.00	.....	..	.....	.....
8 x3	11	36.00	38.50	16x10	18	135.00	143.00	.....	..	.....	.....
8 x4	11	36.00	38.50	16x12	18	135.00	143.00		..		
8 x5	11	36.00	38.50	16x14	18	135.00	143.00		..		
8 x6	11	36.00	38.50		..				..		

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Extra Heavy Cast Iron Flanges

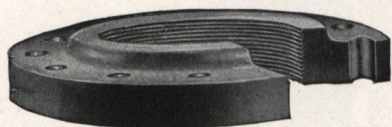


Fig. 1170. Extra Heavy Flange. Threaded.

For Steam Working Pressures
Up to 250 Pounds

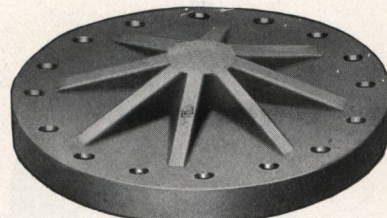


Fig. 1171. Blind Flange.

Extra Heavy Cast Iron Flanges

Threaded				Blind		
Size Inches	Faced Each	Faced and Drilled Each	Bolts for One Joint Per Set	Outside Size Inches	Faced Each	Faced and Drilled Each
1 x 4 1/2	.....	.....	.....	4 1/2	.....	.....
1 1/4 x 5	.....	.....	.....	5	.....	.....
1 1/2 x 6	.....	.....	.....	6	.....	.....
2 x 6 1/2	1.25	1.60	.25	6 1/2	1.90	2.25
2 1/2 x 7 1/2	1.40	1.75	.40	7 1/2	2.10	2.45
3 x 8 1/4	1.60	2.05	.55	8 1/4	2.40	2.85
3 1/2 x 9	2.00	2.55	.55	9	3.00	3.55
4 x 10	2.25	2.95	.80	10	3.35	4.05
4 1/2 x 10 1/2	2.40	3.10	.80	10 1/2	3.60	4.30
5 x 11	2.65	3.35	.80	11	4.00	4.70
6 x 12 1/2	3.30	4.05	1.15	12 1/2	5.00	5.75
7 x 14	4.40	5.30	1.80	14	6.60	7.50
8 x 15	5.10	6.15	1.80	15	7.65	8.70
9 x 16 1/4	6.30	7.50	1.80	16 1/4	9.50	10.70
10 x 17 1/2	7.40	8.90	2.60	17 1/2	11.00	12.50
12 x 20 1/2	10.75	12.50	2.75	20 1/2	16.00	17.75
14 x 23	15.00	17.00	3.60	23	22.50	24.50
15 x 24 1/2	19.00	21.50	4.75	24 1/2	28.50	31.00
16 x 25 1/2	22.25	25.00	4.75	25 1/2	33.50	36.25
18 x 28	26.00	29.00	5.60	28	39.00	42.00
20 x 30 1/2	31.00	35.00	8.30	30 1/2	46.00	50.00

Extra Heavy Cast Iron Reducing
Companion Flanges

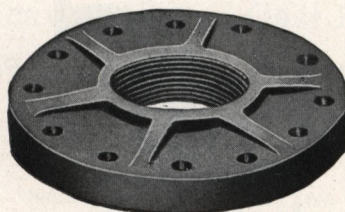


Fig. 1172

For Steam Working Pressures
Up to 250 Pounds

Extra Heavy Cast Iron Reducing Companion Flanges

Size Inches	Faced Each	Faced and Drilled Each	Size Inches	Faced Each	Faced and Drilled Each	Size Inches	Faced Each	Faced and Drilled Each
1 1/2 x 7 1/2	2.30	2.65	4 x 11	4.40	5.10	7 x 16 1/4	10.50	11.70
2 x 7 1/2	2.30	2.65	4 1/2 x 11	4.40	5.10	8 x 16 1/4	10.50	11.70
1 1/2 x 8 1/4	2.65	3.10	2 x 12 1/2	5.50	6.25	5 x 17 1/2	12.00	13.50
2 x 8 1/4	2.65	3.10	2 1/2 x 12 1/2	5.50	6.25	6 x 17 1/2	12.00	13.50
2 1/2 x 8 1/4	2.65	3.10	3 x 12 1/2	5.50	6.25	7 x 17 1/2	12.00	13.50
2 x 9	3.30	3.85	4 x 12 1/2	5.50	6.25	8 x 17 1/2	12.00	13.50
2 1/2 x 9	3.30	3.85	4 1/2 x 12 1/2	5.50	6.25	9 x 17 1/2	12.00	13.50
3 x 9	3.30	3.85	5 x 12 1/2	5.50	6.25	6 x 20 1/2	17.50	19.25
2 x 10	3.70	4.40	4 1/2 x 14	7.25	8.15	7 x 20 1/2	17.50	19.25
2 1/2 x 10	3.70	4.40	5 x 14	7.25	8.15	8 x 20 1/2	17.50	19.25
3 x 10	3.70	4.40	6 x 14	7.25	8.15	9 x 20 1/2	17.50	19.25
3 1/2 x 10	3.70	4.40	3 x 15	8.40	9.45	10 x 20 1/2	17.50	19.25
2 x 10 1/2	4.00	4.70	3 1/2 x 15	8.40	9.45	8 x 23	25.00	27.00
2 1/2 x 10 1/2	4.00	4.70	4 x 15	8.40	9.45	9 x 23	25.00	27.00
3 x 10 1/2	4.00	4.70	5 x 15	8.40	9.45	10 x 23	25.00	27.00
3 1/2 x 10 1/2	4.00	4.70	6 x 15	8.40	9.45	12 x 23	25.00	27.00
4 x 10 1/2	4.00	4.70	7 x 15	8.40	9.45	8 x 24 1/2	31.50	34.00
2 x 11	4.40	5.10	4 x 16 1/4	10.50	11.70	10 x 24 1/2	31.50	34.00
2 1/2 x 11	4.40	5.10	5 x 16 1/4	10.50	11.70	12 x 24 1/2	31.50	34.00
3 x 11	4.40	5.10	6 x 16 1/4	10.50	11.70	14 x 24 1/2	31.50	34.00
3 1/2 x 11	4.40	5.10	.....	.....	.....	.....	.....	.....

Template for Drilling, page 123. Semi-Steel at special prices.

Extra Heavy Cast Iron Flanged Fittings

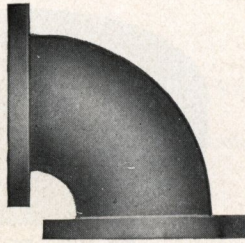


Fig. 1180. Elbow

Flanged Elbows
For Steam Working
Pressures to 250 Pounds

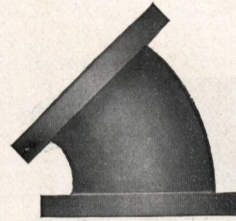


Fig. 1181. 45° Elbow

Extra Heavy Flanged Elbows

Fig. 1180

Size Inches	Faced Each	Faced and Drilled Each	Center to Face Inches	Diameter of Flanges Inches	Faced Each	Faced and Drilled Each	Center to Face Inches
1 1/4	4.50	5.40	4 1/4	5	5.00	5.90	2 1/2
1 1/2	4.50	5.40	4 1/2	6	5.00	5.90	2 3/4
2	4.50	5.40	5	6 1/2	5.00	5.90	3
2 1/2	4.75	5.65	5 1/2	7 1/2	5.25	6.15	3 1/2
3	5.15	6.25	6	8 1/4	5.65	6.75	3 3/2
3 1/2	6.10	7.35	6 1/2	9	6.75	8.00	4
4	6.75	8.25	7	10	7.50	9.00	4 1/2
4 1/2	8.25	9.75	7 1/2	10 1/2	9.00	10.50	4 1/2
5	9.35	10.85	8	11	10.35	11.85	5
6	11.40	13.40	8 1/2	12 1/2	12.50	14.50	5 1/2
7	15.75	18.00	9	14	16.50	18.75	6
8	18.00	20.50	10	15	19.00	21.50	6
9	25.50	28.85	10 1/2	16 1/4	26.75	30.10	6 1/2
10	28.50	32.50	11 1/2	17 1/4	30.00	34.00	7
12	42.00	46.50	13	20 1/2	44.00	48.50	8
14	62.00	67.50	15	23	62.00	67.50	8 1/2
15	70.00	77.00	15 1/2	24 1/2	70.00	77.00	9
16	82.00	90.00	16 1/2	25 1/2	82.00	90.00	9 1/2

Fig. 1181

Extra Heavy Reducing Taper
Elbows



Fig. 1182. Taper Elbow

For Steam Working Pressures
Up to 250 Pounds

Extra Heavy Reducing Taper Elbows

Size Inches	Faced Each	Faced and Drilled Each	Diameter of Flanges Inches	Center to Face Inches	Size Inches	Faced Each	Faced and Drilled Each	Diameter of Flanges Inches	Center to Face Inches
2 x 1 1/4	9.00	9.90	6 1/2 x 5	5	7x 5	31.50	33.75	14 x 11	9
2 x 1 1/2	9.00	9.90	6 1/2 x 6	5	7x 6	31.50	33.75	14 x 12 1/2	9
2 1/2 x 1 1/2	9.50	10.40	7 1/2 x 6	5 1/2	8x 4	36.00	38.50	15 x 11	10
2 1/2 x 2	9.50	10.40	7 1/2 x 6 1/2	5 1/2	8x 5	36.00	38.50	15 x 11	10
3 x 1 1/2	10.25	11.35	8 1/4 x 6	6	8x 6	36.00	38.50	15 x 12 1/2	10
3 x 2	10.25	11.35	8 1/4 x 6 1/2	6	8x 7	36.00	38.50	15 x 14	10
3 x 2 1/2	10.25	11.35	8 1/4 x 7 1/2	6	10x 5	57.00	61.00	17 1/2 x 11	11 1/2
3 1/2 x 2	12.25	13.50	9 x 6 1/2	6 1/2	10x 6	57.00	61.00	17 1/2 x 12 1/2	11 1/2
3 1/2 x 2 1/2	12.25	13.50	9 x 7 1/2	6 1/2	10x 8	57.00	61.00	17 1/2 x 15	11 1/2
3 1/2 x 3	12.25	13.50	9 x 8 1/4	6 1/2	12x 7	84.00	88.50	20 1/2 x 14	13
4 x 2	13.50	15.00	10 x 6 1/2	7	12x 8	84.00	88.50	20 1/2 x 15	13
4 x 2 1/2	13.50	15.00	10 x 7 1/2	7	12x 9	84.00	88.50	20 1/2 x 16 1/4	13
4 x 3	13.50	15.00	10 x 8 1/4	7	12x 10	84.00	88.50	20 1/2 x 17 1/2	13
4 x 3 1/2	13.50	15.00	10 x 9	7	14x 6	105.00	110.50	23 x 12 1/2	15
5 x 2 1/2	18.75	20.25	11 x 7 1/2	8	14x 10	105.00	110.50	23 x 17 1/2	15
5 x 3	18.75	20.25	11 x 8 1/4	8	14x 12	105.00	110.50	23 x 20 1/2	15
5 x 4	18.75	20.25	11 x 10	8	15x 6	120.00	127.00	24 1/2 x 12 1/2	15 1/2
6 x 3	22.75	24.75	12 1/2 x 8 1/4	8 1/2	15x 10	120.00	127.00	24 1/2 x 17 1/2	15 1/2
6 x 3 1/2	22.75	24.75	12 1/2 x 9	8 1/2	15x 12	120.00	127.00	24 1/2 x 20 1/2	15 1/2
6 x 4	22.75	24.75	12 1/2 x 10	8 1/2	16x 8	135.00	143.00	25 1/2 x 15	16 1/2
6 x 4 1/2	22.75	24.75	12 1/2 x 10 1/2	8 1/2	16x 10	135.00	143.00	25 1/2 x 17 1/2	16 1/2
6 x 5	22.75	24.75	12 1/2 x 11	8 1/2	16x 12	135.00	143.00	25 1/2 x 20 1/2	16 1/2
7 x 4	31.50	33.75	14 x 10	9	16x 14	135.00	143.00	25 1/2 x 23	16 1/2

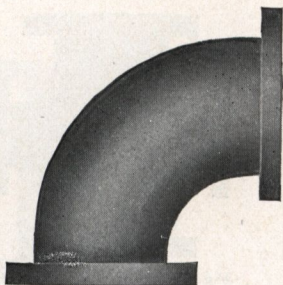
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Template for Drilling, page 123.

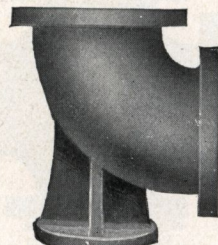
Gaskets, page 123.

Dimensions, page 122.

Extra Heavy Flanged Cast Iron Fittings

Fig. 1191
Long Radius Elbow

Flanged Elbows

For Steam Working Pressures
to 250 PoundsFig. 1192
Base Elbow

Extra Heavy Flanged Elbows

Fig. 1191

Fig. 1192

Size Inches	Faced Each	Faced and Drilled Each	Radius Inches	Center to Face Inches	Diameter of Flanges Except Base Flange Inches	Faced Except Base Flange Each	Faced and Drilled Ex- cept Base Flange Each	Center to Face of Round or Square Base Inches	Diameter of Base Flange Inches
1 1/4	.....	.....	.....	.....	5	.....	.....	4 1/2	4
1 1/2	.....	.....	.....	.....	6	.....	.....	5	4 1/2
2	7.50	8.85	5 1/4	6 1/2	6 1/2	.....	.....	5 1/2	5
2 1/2	8.00	9.35	5 5/8	7	7 1/2	.....	.....	6	5
3	8.60	10.25	6 1/4	7 3/4	8 1/2	.....	.....	6 1/4	6
3 1/2	10.25	12.15	6 7/8	8 1/2	9	.....	.....	6 3/4	6
4	11.25	13.50	7 3/8	9	10	13.50	15.00	7	6 1/2
4 1/2	13.75	16.00	7 3/4	9 1/2	10 1/2	16.50	18.00	7 1/4	6 1/2
5	15.50	17.75	8 1/2	10 1/4	11	18.75	20.25	7 1/2	7 1/2
6	19.00	22.00	9 5/8	11 1/2	12 1/2	22.75	24.75	8	7 1/2
7	26.50	29.85	10 7/8	12 3/4	14	31.50	33.75	8 3/4	7 1/2
8	30.00	33.75	12	14	15	36.00	38.50	9 1/4	10
9	42.50	47.50	13	15 1/4	16 1/4	51.00	54.35	10	10
10	47.75	53.75	14 1/8	16 1/2	17 1/2	57.00	61.00	10 1/2	10
12	70.00	76.75	16 1/2	19	20 1/2	84.00	88.50	11	12 1/2
14	103.50	111.75	18 3/8	21 1/2	23	105.00	110.50	14	12 1/2
15	117.00	127.00	20	22 3/4	24 1/2	120.00	127.00	14 1/2	12 1/2
16	137.00	149.00	21 1/4	24	25 1/2	135.00	143.00	15 1/4	12 1/2

Extra Heavy Flanged Cast Iron Tees

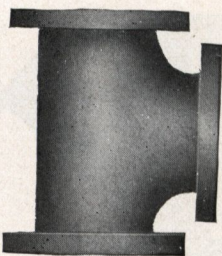
For Steam Working Pressures
to 250 PoundsSame List Price applies to Tees
reducing on run or branch.

Fig. 1193. Tee

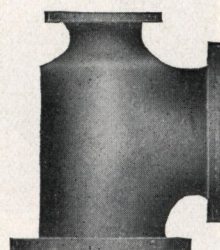


Fig. 1194. Tee Reducing

Extra Heavy Flanged Tees

Fig. 1193

Fig. 1194

Size Inches	Faced Each	Faced and Drilled Each	Diameter of Flanges Inches	Center to Face Inches	Face to Face Inches	Faced Each	Faced and Drilled Each
1 1/4	.....	.....	5	4 1/4	8 1/2	.....	.....
1 1/2	.....	.....	6	4 1/2	9	.....	.....
2	6.50	7.85	6 1/2	5	10	7.50	8.85
2 1/2	6.50	7.85	7 1/2	5 1/2	11	8.00	9.35
3	6.90	8.25	8 1/2	6	12	8.60	10.25
3 1/2	7.50	9.15	9	6 1/2	13	10.25	12.15
4	8.90	10.80	.....	.....	.....	.....	.....
4 1/2	9.75	12.00	10	7	14	11.25	13.50
5	12.00	14.25	10 1/2	7 1/2	15	13.75	16.00
5 1/2	13.50	15.75	11	8	16	15.50	17.75
6	16.50	19.50	12 1/2	8 1/2	17	19.00	22.00
7	23.00	26.35	14	9	18	26.50	29.85
8	26.00	29.75	15	10	20	30.00	33.75
9	37.00	42.00	16 1/4	10 1/2	21	42.50	47.50
10	41.50	47.50	17 1/2	11 1/2	23	47.75	53.75
12	61.00	67.75	20 1/2	13	26	70.00	76.75
14	90.00	98.25	23	15	30	103.50	111.75
15	102.00	112.00	24 1/2	15 1/2	31	117.00	127.00
16	119.00	131.00	25 1/2	16 1/2	33	137.00	149.00

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Extra Heavy Flanged Cast Iron Fittings

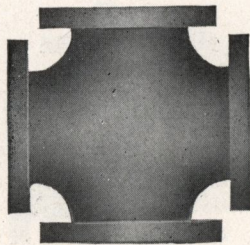


Fig. 1200. Cross

Flanged Crosses
For Steam Working Pressures
to 250 Pounds

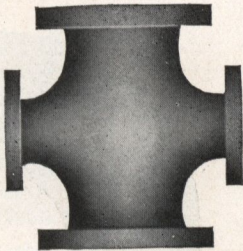


Fig. 1201. Cross Reducing

Extra Heavy Flanged Crosses

Fig. 1200				Fig. 1201			
Size Inches	Faced Each	Faced and Drilled Each	Diameter of Flanges Inches	Center to Face Inches	Face to Face Inches	Faced Each	Faced and Drilled Each
1 1/4	.....	.....	5	4 1/4	8 1/2	.....	.....
1 1/2	.....	.....	6	4 1/2	9	.....	.....
2	10.00	11.80	6 1/2	5	10	11.50	13.30
2 1/2	10.50	12.30	7 1/2	5 1/2	11	12.00	13.80
3	11.50	13.75	8 1/4	6	12	13.25	15.50
3 1/2	13.50	16.00	9	6 1/2	13	15.50	18.00
4	15.00	18.00	10	7	14	17.00	20.00
4 1/2	18.00	21.00	10 1/2	7 1/2	15	21.00	24.00
5	20.50	23.50	11	8	16	23.50	26.50
6	25.00	29.00	12 1/2	8 1/2	17	29.00	33.00
7	35.00	39.50	14	9	18	40.00	44.50
8	40.00	45.00	15	10	20	46.00	51.00
9	56.00	62.75	16 1/4	10 1/2	21	65.00	71.75
10	63.00	71.00	17 1/2	11 1/2	23	72.00	80.00
12	92.00	101.00	20 1/2	13	26	106.00	115.00
14	136.00	147.00	23	15	30	158.00	169.00
15	155.00	169.00	24 1/2	15 1/2	31	177.00	191.00
16	180.00	196.00	25 1/2	16 1/2	33	207.00	223.00

Extra Heavy Flanged Laterals

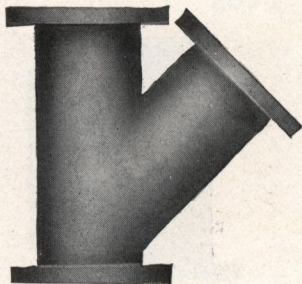


Fig. 1202. Lateral

For Steam Working Pressures
to 250 Pounds

List Prices for reducing sizes apply to Laterals
reducing on run or branch

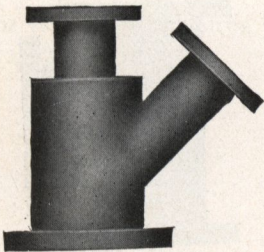


Fig. 1203
Reducing Flanged Lateral

Extra Heavy Flanged Laterals, or Y-Branches

Fig. 1202				Fig. 1203			
Size Inches	Faced Each	Faced and Drilled Each	Diameter of Flanges Inches	Center to Face of Run or Outlet Inches	Face to Face of Run Inches	Faced Each	Faced and Drilled Each
2	10.00	11.80	6 1/2	9	11 1/2	11.50	13.30
2 1/2	10.50	12.30	7 1/2	10 1/2	13	12.00	13.80
3	11.50	13.75	8 1/4	11	14	13.25	15.50
3 1/2	13.50	16.00	9	12 1/2	15 1/2	15.50	18.00
4	15.00	18.00	10	13 1/2	16 1/2	17.00	20.00
4 1/2	18.00	21.00	10 1/2	14 1/2	18	21.00	24.00
5	20.50	23.50	11	15	18 1/2	23.50	26.50
6	25.00	29.00	12 1/2	17 1/2	21 1/2	29.00	33.00
7	35.00	39.50	14	19	23 1/2	40.00	44.50
8	40.00	45.00	15	20 1/2	25 1/2	46.00	51.00
9	56.00	62.75	16 1/4	22 1/2	27 1/2	65.00	71.75
10	63.00	71.00	17 1/2	24	29 1/2	72.00	80.00
12	92.00	101.00	20 1/2	27 1/2	33 1/2	106.00	115.00
14	136.00	147.00	23	31	37 1/2	158.00	169.00
15	155.00	169.00	24 1/2	33	39 1/2	177.00	191.00
16	180.00	196.00	25 1/2	34 1/2	42	207.00	223.00

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Flanged Long Sweep Cast Iron Fittings—Extra Heavy

For Steam Pressures to 250 Pounds

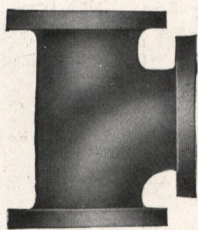


Fig. 1210. Single Sweep Tee

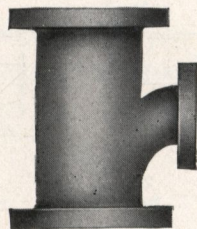


Fig. 1211. Reducing on Branch

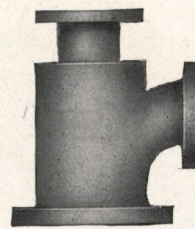


Fig. 1212. Reducing on Run or Branch

Extra Heavy Single Sweep Flanged Tees

Size Inches	Diameter Flange	Center to Face	Face to Face	Fig. 1210		Fig. 1211-1212	
				Faced Each	Faced and Drilled Each	Faced Each	Faced and Drilled Each
2	6½	5	10	7.50	8.85	8.60	9.95
2½	7½	5½	11	8.00	9.35	9.15	10.50
3	8¼	6	12	8.60	10.25	9.90	11.55
3½	9	6½	13	10.25	12.15	11.75	13.65
4	10	7	14	11.25	13.50	13.00	15.25
4½	10½	7½	15	13.75	16.00	15.75	18.00
5	11	8	16	15.50	17.75	17.85	20.10
6	12½	8½	17	19.00	22.00	22.00	25.00
7	14	9	18	26.50	29.85	30.50	33.85
8	15	10	20	30.00	33.75	34.50	38.25
9	16¼	10½	21	42.50	47.50	49.00	54.00
10	17½	11½	23	47.75	53.75	55.00	61.00
12	20½	13	26	70.00	76.75	80.00	86.75
14	23	15	30	103.50	111.75	119.00	127.25
15	24½	15½	31	117.00	127.00	135.00	145.00
16	25½	16½	33	137.00	149.00	158.00	170.00

Extra Heavy Double Sweep Flanged Fittings

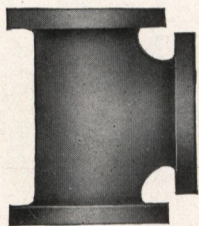


Fig. 1213. Double Sweep Tee

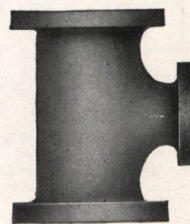


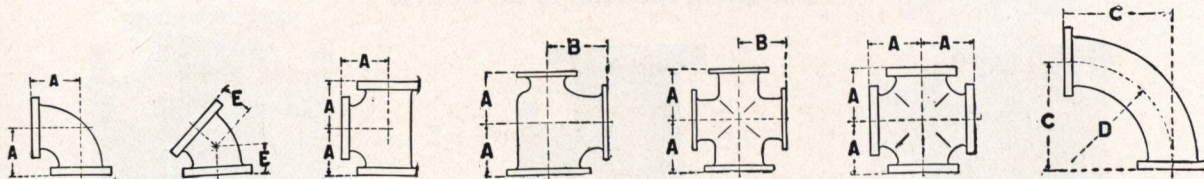
Fig. 1214. Reducing on Branch

Extra Heavy Double Sweep Flanged Tees

Size Inches	Diameter Flange	Center to Face	Face to Face	Fig. 1213		Fig. 1214	
				Faced Each	Faced and Drilled Each	Faced Each	Faced and Drilled Each
2	6½	5	10	7.50	8.85	8.60	9.95
2½	7½	5½	11	8.00	9.35	9.15	10.50
3	8¼	6	12	8.60	10.25	9.90	11.55
3½	9	6½	13	10.25	12.15	11.75	13.65
4	10	7	14	11.25	13.50	13.00	15.25
4½	10½	7½	15	13.75	16.00	15.75	18.00
5	11	8	16	15.50	17.75	17.85	20.10
6	12½	8½	17	19.00	22.00	22.00	25.00
7	14	9	18	26.50	29.85	30.50	33.85
8	15	10	20	30.00	33.75	34.50	38.25
9	16¼	10½	21	42.50	47.50	49.00	54.00
10	17½	11½	23	47.75	53.75	55.00	61.00
12	20½	13	26	70.00	76.75	80.00	86.75
14	23	15	30	103.50	111.75	119.00	127.25
15	24½	15½	31	117.00	127.00	135.00	145.00
16	25½	16½	33	137.00	149.00	158.00	170.00

Note. Double Sweep Tees are not made Reducing on Run. Long Sweep Flanged Elbow, page 119. Template for Drilling, page 123.

Dimensions of Extra Heavy Cast Iron Flanged Fittings

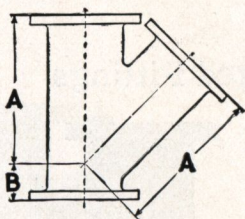


Size, inches.....	1¼	1½	2	2½	3	3½	4	4½	5	6	7
AA-Face to Face, inches.....	8½	9	10	11	12	13	14	15	16	17	18
A-Center to Face, inches.....	4¼	4½	5	5½	6	6½	7	7½	8	8½	9
B-Center to Face, inches.....	4¼	4½	5	5½	6	6½	7	7½	8	8½	9
C-Center to Face, inches.....			6½	7	7¾	8½	9	9½	10¼	11½	12¾
D-Radius, inches.....			5¼	5¾	6¼	6¾	7¾	7¾	8½	9¾	10¾
E-Center to Face.....	2½	2¾	3	3½	3½	4	4½	4½	5	5½	6

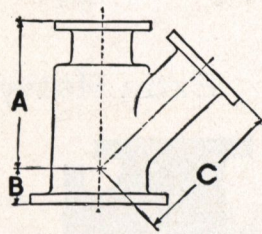
Size, inches.....	8	9	10	12	14	15	16	18	20	22	24
AA-Face to Face, inches.....	20	21	23	26	30	31	33	36	39	41	45
A-Center to Face.....	10	10½	11½	13	15	15½	16½	18	19½	20½	22½
B-Center to Face, inches.....	10	10½	11½	13	15	15½	16½	18	19½	20½	22½
C-Center to Face, inches.....	14	15¼	16½	19	21½	22¾	24	26½	29	31½	34
D-Radius, inches.....	12	13	14½	16½	18¾	20	21¼	23¾	26	28¾	30¾
E-Center to Face, inches.....	6	6½	7	8	8½	9	9½	10	10½	11	12

All Reducing Fittings, 1¼ inches to 16 inches inclusive, are the same dimensions, Center to Face, as straight sizes. For dimensions of Reducing Fittings 18 inches and larger, see lower table.

Size, inches.....	18	20	22	24
Size of Outlets, inches.....	12 and Smaller	14 and Smaller	15 and Smaller	16 and Smaller
AA-Face to Face of Run, inches.....	28	31	33	34
A-Center to Face of Run, inches.....	14	15½	16½	17
B-Center to Face of Outlet, inches.....	17	18½	20	21½



Straight Y-Branch



Reducing Y-Branch
Reducing on Run or Branch

Dimensions of Straight Y-Branches

Size, inches.....	1¼	1½	2	2½	3	3½	4	4½	5	6	7
Face to Face of Run, inches.....	9½	11	11½	13	14	15½	16½	18	18½	21½	23½
A-Center to Face, inches.....	7¼	8½	9	10½	11	12½	13½	14½	15	17½	19
B-Center to Face, inches.....	2¼	2½	2½	2½	3	3	3	3½	3½	4	4½
Size, inches.....	8	9	10	12	14	15	16	18	20	22	24
Face to Face of Run, inches.....	25½	27½	29½	33½	37½	39½	42	45½	49	53	57½
A-Center to Face, inches.....	20½	22½	24	27½	31	33	34½	37½	40½	43½	47½
B-Center to Face, inches.....	5	5	5½	6	6½	6½	7½	8	8½	9½	10

Reducing Y-Branches, 2 inches to 16 inches, are same dimensions as Straight Size Y-Branches. For dimensions of Reducing Y-Branches 18 inches and larger, see lower table.

Dimensions of Reducing Sizes 18 inches and Larger

Size, inches.....	18	20	22	24
Size of Branch, inches.....	9 and Smaller	10 and Smaller	10 and Smaller	12 and Smaller
Face to Face of Run, inches.....	34	37	40	44
A-Center to Face of Run, inches.....	31	34	37	41
B-Center to Face of Run, inches.....	3	3	3	3
C-Center to Face of Branch, inches.....	32½	36	39	43

If the Branch is larger than that given in this lower table, use the Straight Size Dimension Table.

Dimensions of Reducing Flanged Fittings are always regulated by the Reduction of the Outlet.

Fittings Reducing on the Run only are same dimensions as Straight Fittings.

Drilling Templates, page 123.

Extra Heavy Drilling Templates

For Flanged Valves, Flanged Fittings and Flanges—250 Pounds Working Pressure

American Standard in Effect January 1, 1915

Size Inches	Diameter of Flanges	Thickness of Flanges	Bolt Circle	Number of Bolts	Size of Bolts	Length of Bolts
1	4½	⅜	3¼	4	½	2
1¼	5	¾	3¾	4	½	2¼
1½	6	⅞	4½	4	⅝	2½
2	6½	⅞	5	4	⅝	2½
2½	7½	1	5⅞	4	¾	3
3	8¼	1⅝	6⅝	8	¾	3¼
3½	9	1⅞	7¼	8	¾	3¼
4	10	1¾	7⅞	8	¾	3½
4½	10½	1⅞	8½	8	¾	3½
5	11	1⅞	9¼	8	¾	3¾
6	12½	1⅞	10⅝	12	¾	3¾
7	14	1½	11⅞	12	⅞	4
8	15	1⅝	13	12	⅞	4¼
9	16¼	1¾	14	12	1	4¾
10	17½	1⅞	15¼	16	1	5
12	20½	2	17¾	16	1⅝	5½
14	23	2⅝	20¼	20	1⅝	5¾
15	24½	2⅞	21½	20	1¾	6
16	25½	2¼	22½	20	1¾	6
18	28	2⅝	24¾	24	1¾	6¼
20	30½	2½	27	24	1⅝	6¾
22	33	2⅝	29¼	24	1½	7
24	36	2¾	32	24	1⅝	7½

Gaskets for Extra Heavy Flanged Valves, Flanges and Flanged Fittings

For Working Pressures to 250 Pounds

Ring Gaskets						Full Gaskets					
Size Inches	Inside Diameter of Gasket Inches	Outside Diameter of Gasket Inches	Price			Size Inches	Inside Diameter of Gasket Inches	Outside Diameter of Gasket Inches	Price		
			⅛ inch Rainbow Each	⅛ inch Asbestos Each	Corrugated Copper Each				⅛ inch Rainbow Each	⅛ inch Asbestos Each	Corrugated Copper Each
1	1	2⅝	.08	.10	.04	1	1	4½	.18	.20	.09
1¼	1¼	3⅝	.08	.12	.04	1¼	1¼	5	.18	.24	.09
1½	1½	3¾	.08	.15	.04	1½	1½	6	.18	.30	.09
2	2	4¼	.09	.18	.05	2	2	6½	.21	.36	.12
2½	2½	5	.12	.22	.06	2½	2½	7½	.25	.40	.15
3	3	5⅝	.15	.25	.08	3	3	8¼	.32	.50	.18
3½	3½	6½	.16	.30	.09	3½	3½	9	.35	.60	.21
4	4	7	.18	.35	.10	4	4	10	.45	.70	.25
4½	4½	7⅝	.21	.40	.12	4½	4½	10½	.47	.80	.27
5	5	8⅝	.25	.45	.15	5	5	11	.50	.90	.30
6	6	9¾	.30	.50	.18	6	6	12½	.60	1.00	.36
7	7	10⅞	.40	.55	.21	7	7	14	.75	1.10	.45
8	8	12	.42	.60	.24	8	8	15	.80	1.20	.50
9	9	13	.48	.65	.27	9	9	16¼	.95	1.30	.55
10	10	14¼	.55	.75	.33	10	10	17½	1.05	1.50	.65
12	12	16¾	.70	.90	.42	12	12	20½	1.40	1.80	.80
14	13½	19	1.00	1.00	.55	14	13½	23	1.70	2.20	1.00
15	14½	20½	1.05	1.10	.60	15	14½	24½	1.90	2.30	1.10
16	15½	21⅝	1.20	1.25	.66	16	15½	25½	2.00	2.60	1.20
18	17½	23⅝	1.35	1.35	.75	18	17½	28	2.20	2.90	1.30
20	19½	25½	1.45	1.50	.85	20	19½	30½	2.50	3.25	1.50

Ring Gaskets covering Face of Flange inside of Bolts will be furnished unless otherwise ordered.

We can supply Gaskets from any sheet or metal on the market.

Cast Steel Fittings

For Superheated Steam Up to 350 Pounds Working Pressure
and a Total Temperature of 800°



Fig. 1240. Steel Elbow



Fig. 1241. 45° Steel Elbow



Fig. 1242. Steel Tee

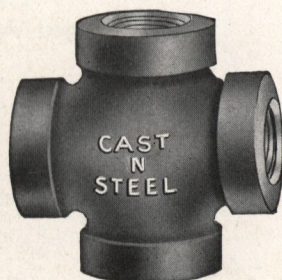


Fig. 1243. Steel Cross

Cast Steel Fittings—Screwed

Size, inches.....	3	3½	4	4½	5	6
90° Elbow, each.....	6.00	7.75	8.50	10.00	12.00	16.50
45° Elbow, each.....	6.00	7.75	8.50	10.00	12.00	16.50
Tee, each.....	9.00	11.50	12.75	15.00	18.00	25.00
Cross, each.....	12.00	15.50	17.00	20.00	24.00	33.00

Cast Steel Extra Heavy Flanged Fittings

For 350 Pounds Working Pressure—800° Total Temperature

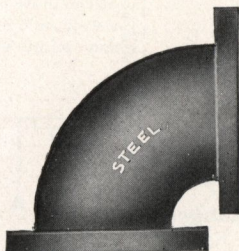


Fig. 1244. Cast Steel Flanged Elbow

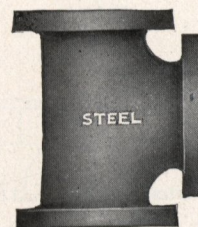


Fig. 1245. Cast Steel Flanged Tee

Cast Steel Extra Heavy Flanged Fittings

Size	90° Degree Elbows		45° Degree Elbows		Long Radius Elbows		Reducing Elbows		Double Sweep Tees		Double Sweep Reducing Tees	
	Faced	Faced Drilled and Spot-Faced	Faced	Faced Drilled and Spot-Faced	Faced	Faced Drilled and Spot-Faced	Faced	Faced Drilled and Spot-Faced	Faced	Faced Drilled and Spot-Faced	Faced	Faced Drilled and Spot-Faced
1¼	9.00	11.00	9.00	11.00	.....	.....	.....	.....	13.00	16.00	.....	.....
1½	10.00	12.00	10.00	12.00	.....	.....	.....	.....	14.00	17.00	.....	.....
2	11.00	13.00	11.00	13.00	14.00	17.00	14.00	16.00	15.00	18.00	15.00	18.00
2½	13.00	15.00	13.00	15.00	16.00	19.00	16.00	18.00	17.00	20.00	17.00	20.00
3	14.00	17.00	14.00	17.00	18.00	22.00	17.00	20.00	19.00	23.00	19.00	23.00
3½	17.00	20.00	17.00	20.00	22.00	26.00	21.00	24.00	22.00	26.00	22.00	26.00
4	19.00	22.00	19.00	22.00	25.00	29.00	23.00	26.00	25.00	29.00	25.00	29.00
4½	22.00	25.00	22.00	25.00	30.00	34.00	.....	.....	30.00	34.00	30.00	34.00
5	24.00	27.00	24.00	27.00	35.00	39.00	29.00	32.00	33.00	37.00	33.00	37.00
6	29.00	33.00	29.00	33.00	42.00	48.00	35.00	39.00	40.00	46.00	40.00	46.00
7	36.00	41.00	36.00	41.00	52.00	59.00	43.00	48.00	49.00	56.00	49.00	56.00
8	43.00	48.00	43.00	48.00	63.00	70.00	51.00	56.00	58.00	65.00	58.00	65.00
9	52.00	57.00	52.00	57.00	72.00	79.00	.....	.....	69.00	76.00	69.00	76.00
10	61.00	67.00	61.00	67.00	83.00	92.00	73.00	79.00	81.00	90.00	81.00	90.00
12	77.00	84.00	77.00	84.00	105.00	115.00	93.00	100.00	100.00	110.00	100.00	110.00
14	100.00	108.00	100.00	108.00	145.00	157.00	120.00	128.00	135.00	147.00	135.00	147.00
15	112.00	120.00	112.00	120.00	160.00	172.00	135.00	143.00	150.00	162.00	150.00	162.00
16	130.00	140.00	130.00	140.00	190.00	205.00	155.00	165.00	175.00	190.00	175.00	190.00
18	170.00	180.00	170.00	180.00	.....	.....	.....	.....	230.00	245.00	230.00	245.00
20	210.00	225.00	210.00	225.00	.....	.....	.....	.....	300.00	320.00	300.00	320.00
22	270.00	290.00	270.00	290.00	.....	.....	.....	.....	375.00	405.00	375.00	405.00
24	335.00	355.00	335.00	355.00	.....	.....	.....	.....	460.00	490.00	460.00	490.00

Cast Steel Extra Heavy Flanged Fittings—Continued

For 350 Pounds Working Pressure—800° Total Temperature

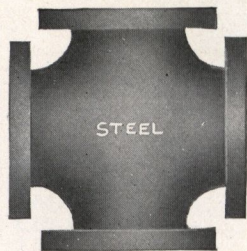


Fig. 1250
Cast Steel Flanged Cross

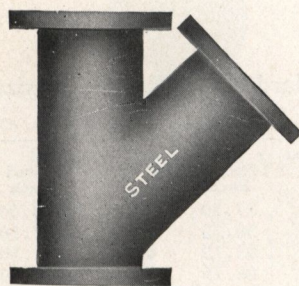


Fig. 1251
Cast Steel Flanged Y



Fig. 1252
Cast Steel Flange

Cast Steel Extra Heavy Flanged Fittings

Size	Crosses		Reducing Crosses		Y-Branches		Reducing Y-Branches		Companion Flanges		Blank Flanges		Reducing Flanges	
	Faced	Faced Drilled and Spot-Faced	Faced	Faced Drilled and Spot-Faced	Faced	Faced Drilled and Spot-Faced	Faced	Faced Drilled and Spot-Faced	Faced	*Faced and Drilled	Faced	*Faced and Drilled	†Size Outside Diameter Inches	*Faced and Drilled
1¼	17.00	21.00	.....	.....	.....	.....	.....	.....	5.40	6.00	.....	.....	.....	.....
1½	19.00	23.00	.....	.....	.....	.....	.....	.....	5.90	6.50	.....	.....	.....	.....
2	21.00	25.00	21.00	25.00	21.00	25.00	.....	.....	6.90	7.50	8.40	9.00	.....	.....
2½	25.00	29.00	25.00	29.00	25.00	29.00	.....	.....	7.30	8.50	8.80	10.00	7½	10.80 12.00
3	27.00	33.00	27.00	33.00	27.00	33.00	.....	.....	8.70	10.00	10.70	12.00	8¾	12.70 14.00
3½	32.00	38.00	32.00	38.00	32.00	38.00	.....	.....	12.10	13.50	14.60	16.00	9	18.10 19.50
4	36.00	42.00	36.00	42.00	36.00	42.00	36.00	42.00	14.80	16.50	18.30	20.00	10	21.80 23.50
4½	42.00	48.00	42.00	48.00	42.00	48.00	42.00	48.00	15.80	17.50	19.80	21.50	10½	23.80 25.50
5	45.00	51.00	45.00	51.00	45.00	51.00	45.00	51.00	16.80	18.50	20.80	22.50	11	24.80 26.50
6	55.00	63.00	55.00	63.00	55.00	63.00	55.00	63.00	20.40	22.00	24.90	26.50	12½	30.90 32.50
7	68.00	78.00	68.00	78.00	68.00	78.00	68.00	78.00	24.70	27.50	30.70	33.50	14	36.70 39.50
8	81.00	91.00	81.00	91.00	81.00	91.00	81.00	91.00	27.00	30.00	34.00	37.00	15	40.00 43.00
9	100.00	110.00	100.00	110.00	100.00	110.00	100.00	110.00	29.50	32.50	37.00	40.00	16	44.00 47.00
10	115.00	127.00	115.00	127.00	115.00	127.00	115.00	127.00	34.50	37.50	52.00	55.00	17½	52.00 55.00
12	145.00	160.00	145.00	160.00	145.00	160.00	145.00	160.00	46.00	50.00	70.00	74.00	20½	70.00 74.00
14	190.00	205.00	190.00	205.00	190.00	205.00	190.00	205.00	55.50	60.00	85.00	90.00	23	85.00 90.00
15	210.00	225.00	210.00	225.00	210.00	225.00	210.00	225.00	64.00	70.00	94.00	100.00	24½	94.00 100.00
16	245.00	265.00	245.00	265.00	245.00	265.00	245.00	265.00	78.00	85.00	115.00	122.00	25½	115.00 122.00
18	320.00	340.00	320.00	340.00	320.00	340.00	320.00	340.00	98.00	105.00	145.00	152.00	28	145.00 152.00
20	400.00	430.00	400.00	430.00	400.00	430.00	400.00	430.00	117.00	125.00	175.00	183.00	30½	175.00 183.00
22	510.00	550.00	510.00	550.00	510.00	550.00	510.00	550.00	140.00	150.00	210.00	220.00	33	210.00 220.00
24	635.00	675.00	635.00	675.00	635.00	675.00	635.00	675.00	165.00	175.00	250.00	260.00	36	250.00 260.00

*Unless otherwise ordered, bolt holes in Cast Steel Flanges will be spot-faced at an extra charge of five cents, net, per hole.

†Outside diameters govern the price of Reducing Flanges, and pipe sizes are same as Cast Iron on page 117.

Drilling Templates same as Cast Iron. See page 123.

Brass Flanged Fittings



Fig. 1260. Brass Elbow

Standard Brass Flanged Fittings
and Companion Flanges
For Steam Working Pressures
to 125 Pounds

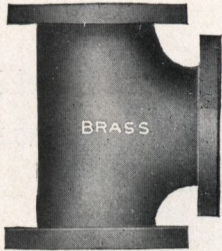


Fig. 1261. Brass Tee

Standard Brass Flanged Fittings

Size Inches	Elbows		45° Elbows		Tees		Crosses		Size Inches	Flanges	
	Faced Each	Faced and Drilled Each	Faced Each	Faced and Drilled Each	Faced Each	Faced and Drilled Each	Faced Each	Faced and Drilled Each		Faced Each	Faced and Drilled Each
2	25.00	26.00	27.50	28.50	37.50	39.00	50.00	52.00	1 x4	5.75	6.00
2½	33.75	35.00	37.25	38.50	50.75	52.50	67.50	70.00	1¼x4½	6.75	7.00
3	43.75	45.00	47.75	49.00	65.75	67.50	87.50	90.00	1½x5	8.75	9.00
3½	58.75	60.00	63.75	65.00	88.25	90.00	117.50	120.00	2 x6	10.75	11.00
4	68.00	70.00	73.00	75.00	102.00	105.00	136.00	140.00	2½x7	12.50	13.00
4½	78.00	80.00	83.00	85.00	117.00	120.00	156.00	160.00	3 x7½	15.50	16.00
5	93.00	95.00	98.00	100.00	137.00	140.00	186.00	190.00	3½x8½	19.25	20.00
6	123.00	125.00	133.00	135.00	187.00	190.00	246.00	250.00	4 x9	24.25	25.00
Reducing Brass Flanged Fittings made to order. Prices on application.									4½x9¼	26.75	27.50
									5 x10	29.00	30.00
									6 x11	36.50	37.50

Extra Heavy Brass Flanged Fittings and Companion Flanges
For Steam Working Pressures Up to 250 Pounds

Price List

	Elbows		45° Elbows		Tees	
Size, Inches	Faced, Each	Faced and Drilled Each	Faced, Each	Faced and Drilled Each	Faced, Each	Faced and Drilled Each
1	13.00	14.00	14.00	15.00	19.50	21.00
1¼	15.00	16.00	16.00	17.00	22.50	24.00
1½	20.00	21.00	22.00	23.00	30.00	31.50
2	25.00	26.00	27.50	28.50	37.50	39.00
2½	33.75	35.00	37.25	38.50	50.75	52.50
3	43.75	45.00	47.75	49.00	65.75	67.50
3½	58.75	60.00	63.75	65.00	88.25	90.00
4	68.00	70.00	73.00	75.00	102.00	105.00
4½	78.00	80.00	83.00	85.00	117.00	120.00
5	93.00	95.00	98.00	100.00	137.00	140.00
6	123.00	125.00	133.00	135.00	187.00	190.00

Price List

Crosses			Screwed Companion Flanges		
Size, Inches	Faced, Each	Faced and Drilled Each	Size, Inches	Faced, Each	Faced and Drilled Each
1	26.00	28.00	1 x 4½	5.75	6.00
1¼	30.00	32.00	1¼ x 5	6.75	7.00
1½	40.00	42.00	1½ x 6	8.75	9.00
2	50.00	52.00	2 x 6½	10.75	11.00
2½	67.50	70.00	2½ x 7½	12.50	13.00
3	87.50	90.00	3 x 8½	15.50	16.00
3½	117.50	120.00	3½ x 9	19.25	20.00
4	136.00	140.00	4 x 10	24.25	25.00
4½	156.00	160.00	4½ x 10½	26.75	27.50
5	186.00	190.00	5 x 11	29.00	30.00
6	246.00	250.00	6 x 12½	36.50	37.50

Reducing Brass Flanged Fittings made to order. Prices on application.

We will make to order at a special price Extra Heavy Brass Flanged Fittings from any of our Extra Heavy Cast Iron patterns.

Brass Valves—Standard No. 2 Pattern

Brass Disc—Competition—Low Pressures

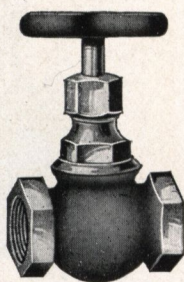


Fig. 1270. Globe Valve

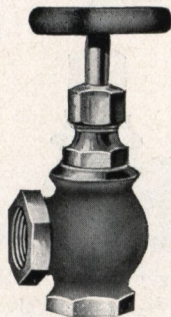


Fig. 1271. Angle Valve

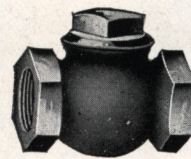


Fig. 1272. Check Valve

Brass Competition Valves

Size, inches.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Globe Valve, each.....	.72	.72	.77	1.00	1.26	1.80	2.52	3.50	5.30	10.00	14.40
Angle Valve, each.....	.72	.72	.77	1.00	1.26	1.80	2.52	3.50	5.30	10.00	14.40
Check Valve, each.....	.65	.65	.70	.90	1.15	1.60	2.25	3.15	4.75	9.00	13.00

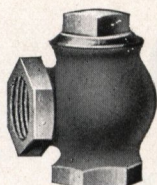


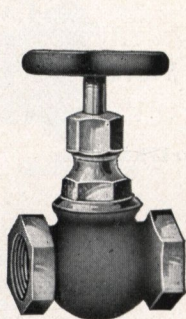
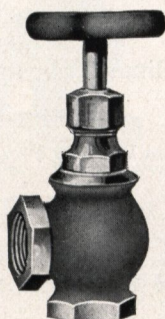
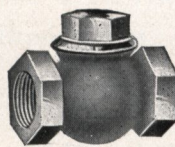
Fig. 1273. Angle Check Valve



Fig. 1274. Vertical Check Valve

Brass Competition Valves

Size, inches.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Angle Check Valves, each.....	.72	.72	.77	1.00	1.26	1.80	2.52	3.50	5.30	10.00	14.40
Vertical Check Valves, each.....	.72	.72	.77	1.00	1.26	1.80	2.52	3.50	5.30	10.00	14.40

Fig. 1275
Globe ValveFig. 1276
Angle ValveFig. 1277
Check ValveFig. 1278
Vertical Check Valve

Standard Pattern Brass Valves

Brass Disc—100 Pounds Working Pressure

Size, inches.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Globe Valve, each.....	.72	.72	.77	1.00	1.26	1.80	2.52	3.50	5.30	10.00	14.40
Angle Valve, each.....	.72	.72	.77	1.00	1.26	1.80	2.52	3.50	5.30	10.00	14.40
Check Valve, each.....	.65	.65	.70	.90	1.15	1.60	2.25	3.15	4.75	9.00	13.00
Vertical Check Valve, each.....	.72	.72	.77	1.00	1.26	1.80	2.52	3.50	5.30	10.00	14.40
Angle Check Valve, each.....	.72	.72	.77	1.00	1.26	1.80	2.52	3.50	5.30	10.00	14.40

The material used in this group of Valves, and in the 125 Pounds standard on following page, is a high-grade Steam Bronze. Uniformity of mixture is assured through the use of only new metals.

The finish of each part to a nicety is guaranteed by the use of specially designed machining tools and gauges.

The testing of each valve before shipment is guaranteed, insuring shipment of only perfect material.

Brass Valves—Screwed

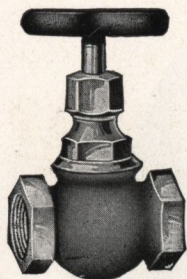


Fig. 1280. Globe Valve

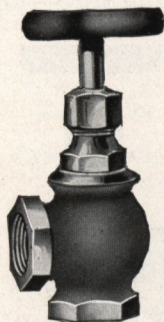


Fig. 1281. Angle Valve

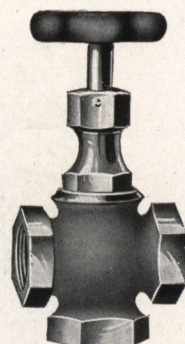


Fig. 1283. Cross Valve

Standard Brass Valves—Screwed
For Steam Working Pressures to 125 Pounds

Size.....	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Globe Valve.....	.72	.72	.77	1.00	1.26	1.80	2.52	3.50	5.30	10.00	14.40	26.50	36.00
Angle Valve.....	.72	.72	.77	1.00	1.26	1.80	2.52	3.50	5.30	10.00	14.40	26.50	36.00
Cross Valve.....	...	...	...	1.50	2.00	2.50	3.50	5.00	8.00	16.00	24.00	.....	.....

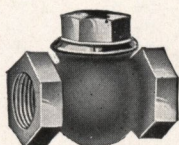


Fig. 1284. Horizontal

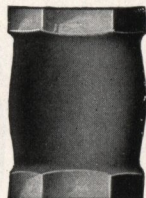


Fig. 1285. Vertical

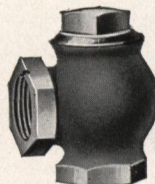


Fig. 1286. Angle

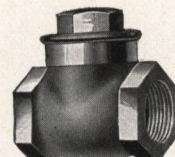
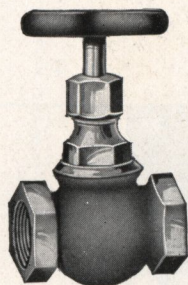
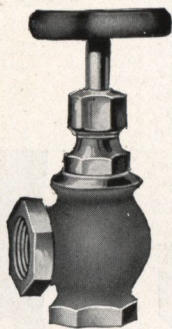


Fig. 1287. Swing

Brass Check Valves—Screwed—125 Pounds

Size.....	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Standard Horizontal.....	.65	.65	.70	.90	1.15	1.60	2.25	3.15	4.75	9.00	13.00
Standard Vertical.....	...	...	.77	1.00	1.26	1.80	2.52	3.50	5.30	10.00	14.40
Standard Angle.....	.72	.72	.77	1.00	1.26	1.80	2.52	3.50	5.30	10.00	14.40
Standard Swing.....	...	...	1.80	2.00	2.25	2.80	3.65	4.75	6.75	.....	.....

Fig. 1288
Globe ValveFig. 1289
Angle Valve

Medium Globe and Angle Valves

Brass—Screwed

For Steam Working Pressures up to 175 Pounds

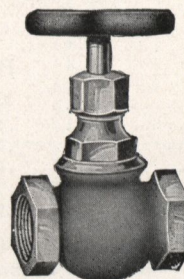
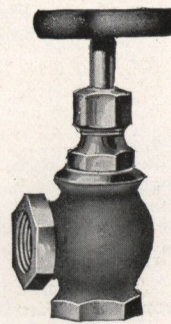
Size.....	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Each.....	1.25	1.25	1.45	1.85	2.50	3.50	5.25	7.00	10.50	20.00	27.00

Extra Heavy Globe and Angle Valves

Brass—Screwed

For Steam Working Pressures up to 250 Pounds

Size.....	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Each.....	2.90	3.70	5.00	7.00	10.50	14.00	21.00	40.00	54.00

Fig. 1289A
Globe ValveFig. 1289B
Angle Valve

Brass Valves—Flanged

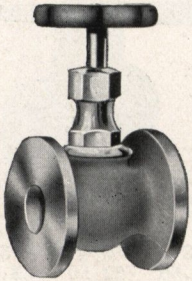


Fig. 1290. Globe Valve

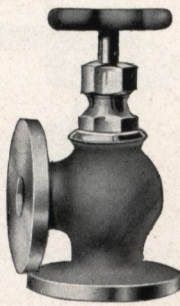


Fig. 1291. Angle Valve

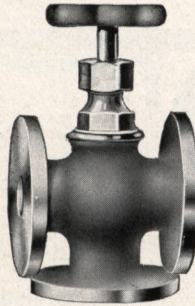


Fig. 1292. Cross Valve

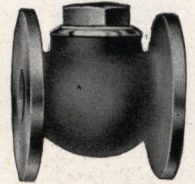


Fig. 1293. Check Valve

Standard Flanged Brass Valves

For Steam Working Pressures to 125 Pounds

Size.....	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
Globe Valves.....	4.50	5.00	6.75	8.50	10.50	16.00	23.00	35.00	50.00	70.00	125.00	200.00
Angle Valves.....	4.50	5.00	6.75	8.50	10.50	16.00	23.00	35.00	50.00	70.00	125.00	200.00
Cross Valves.....	5.25	7.00	9.00	12.00	15.75	22.00	33.00	45.00	.....	.....	.....	.....
Check Valves.....	4.40	4.90	6.50	8.25	10.15	15.50	22.00	33.50	.....	.....	.....	.....
Diameter of Flanges.....	3	3 1/2	4	4 1/2	5	6	7	7 1/2	8 1/2	9	10	11

Medium Pattern Flanged Brass Valves

For Steam Working Pressures Up to 175 Pounds

Size.....	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Fig. 1293A, Globe Valve.....	8.00	9.50	13.50	16.50	24.00	45.00	65.00
Fig. 1293B, Angle Valve.....	8.00	9.50	13.50	16.50	24.00	45.00	65.00
Fig. 1293C, Cross Valve.....	12.80	13.30	18.90	23.10	36.00	67.50	90.00
Fig. 1293D, Check Valve.....	7.00	9.00	13.00	16.00	23.00	44.00	63.00
Diameter of Flanges.....	3 1/2	4	4 1/2	5	6	7	7 1/2

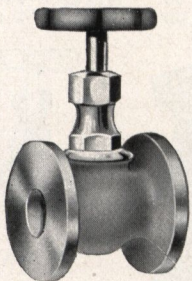


Fig. 1294. Globe Valve

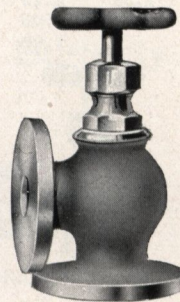


Fig. 1295. Angle Valve

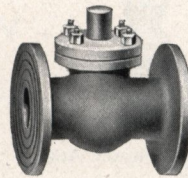


Fig. 1296. Check Valve

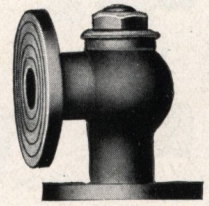


Fig. 1297. Angle Check Valve

Extra Heavy Flanged Brass Valves

For Steam Working Pressures Up to 250 Pounds

Sizes 2 inches and smaller, Screw Top; larger, Yoke Top

Size.....	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2
Globe Valves.....	12.00	16.95	22.50	31.50	51.00	70.50	81.00	102.00	120.00
Angle Valves.....	12.00	16.95	22.50	31.50	51.00	70.50	81.00	102.00	120.00
Check Valves.....	9.50	14.00	19.00	27.00	44.00	62.00	72.00	92.00	110.00
Angle Check Valves.....	9.50	14.00	19.00	27.00	44.00	62.00	72.00	92.00	110.00
Diameter of Flanges.....	4 1/2	5	6	6 1/2	7 1/2	8 1/4	9	10	10 1/2

Extra Heavy Flanged Brass Valves

Extra Heavy Regrinding Brass Valves—Screwed and Flanged

For Working Pressures Up to 300 Pounds

Size.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Fig. 1297A, Globe, Screwed.....	.90	1.10	1.50	2.30	3.60	5.10	7.10	10.90	19.50	29.00
Fig. 1297B, Angle, Screwed.....	.90	1.10	1.50	2.30	3.60	5.10	7.10	10.90	19.50	29.00
Fig. 1297C, Cross, Screwed.....	1.20	1.30	1.90	2.90	4.50	6.30	8.60	13.10	23.40	34.50
Fig. 1297D, *Check, Screwed.....	.90	1.00	1.20	1.70	2.80	3.90	5.50	8.90	16.20	24.30
Fig. 1297E, Swing, Check, Screwed.....	2.00	2.10	2.20	2.90	4.00	5.60	7.50	11.00	18.30	28.30
Fig. 1298, Globe, Flanged.....	.....	.....	5.80	7.30	9.20	12.00	16.00	24.00	37.00	50.00
Fig. 1298A, Angle, Flanged.....	.....	.....	5.80	7.30	9.20	12.00	16.00	24.00	37.00	50.00
Fig. 1298B, Cross, Flanged.....	.....	.....	7.60	9.50	12.50	16.00	20.00	31.00	46.00	63.00
Fig. 1298C, *Check, Flanged.....	.....	.....	3.70	5.20	6.80	9.40	12.70	18.10	29.00	39.10
Fig. 1298D, Swing Check, Flanged.....	.....	.....	4.00	4.90	6.60	9.50	12.50	16.80	25.30	37.00
Diameter Flanges.....	.....	.....	.....	.....	4 1/2	5	6	6 1/2	7 1/2	8 1/4

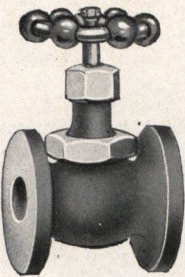
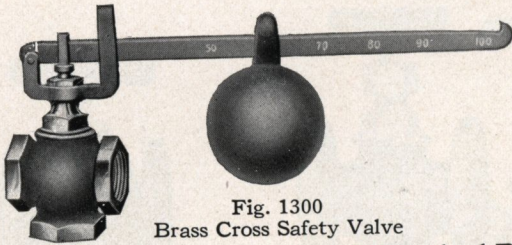
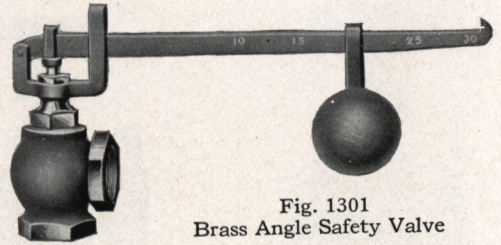


Fig. 1298. Brass Regrinding Valve

*Horizontal or Angle.

Standard Brass Safety Valves

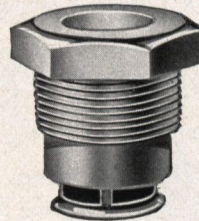
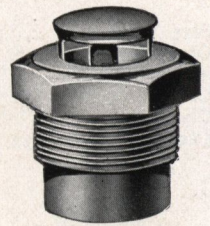
Fig. 1300
Brass Cross Safety ValveFig. 1301
Brass Angle Safety Valve

Standard Brass Safety Valves

Size.....	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Cross Valves, each.....	2.50	3.25	3.90	4.70	7.15	9.00	12.50	22.50	33.50
Angle Valves, each.....	2.50	3.25	3.90	4.70	7.15	9.00	12.50	.....	.....

Note: Cross Valve Levers are regularly graduated 40 to 100 pounds. Angle, 5 to 30 pounds.

Low Pressure Ball Safety, Vacuum and Spring Safety Valves

Fig. 1302
Angle Ball Safety ValveFig. 1303
Straight Ball Safety ValveFig. 1304
Vacuum ValveFig. 1305
Spring Safety Valve

Ball Safety, Vacuum and Spring Safety Valves

Size.....	1/2	3/4	1	1 1/4	1 1/2	2
Angle Ball Safety Valve.....	.....	2.60	3.30	4.50	6.35	8.65
Straight Ball Safety Valve.....	1.50	2.25	3.00	4.00	5.50	8.25
Vacuum Valve.....	.....	2.00	2.50	3.00	4.50	7.00
Spring Safety Valve.....	.....	2.00	2.50	3.00	4.50	7.00

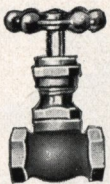


Fig. 1306. Needle Globe



Fig. 1307. Needle Angle

Brass Needle Valves

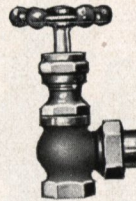
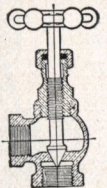


Fig. 1308. With Union



Section

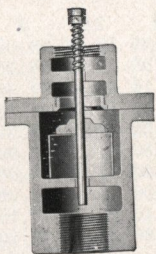
Brass Needle Valves

Size.....	1/8	1/4	3/8	1/2	3/4
Globe and Angle, Rough Body, Fin. Trim.....	.65	.75	.85	1.60	2.00
Globe and Angle, Fin. all over, Fin. Brass Wheel.....	1.00	1.10	1.25	2.25	2.90
Globe and Angle, Rough Body, Fin. Trim, with Union.....	.80	.95	1.15	1.95	3.10
Globe and Angle, Fin. all over, Fin. Brass Wheel, with Union.....	1.20	1.35	1.50	2.60	3.50
Cross Valve, Rough Body, Fin. Trim.....	.95	1.25	1.50	2.40	3.00
Cross Valve, Fin. all over, Fin. Brass Wheel.....	1.40	1.90	2.25	3.40	4.20
Cross Valve, Rough Body, Fin. Trim, with Union.....	1.10	1.45	1.75	2.75	4.10
Cross Valve, Fin. all over, Fin. Brass Wheel, with Union.....	1.60	2.15	2.50	3.60	4.70
Seat Openings in Valves with Brass Stem.....	1/8	1/16	1/4	5/16	7/16
Seat Openings in Valves with Steel Stems.....	3/64	1/16	3/32	1/8	3/16

Note. Prices are for Brass Stem Valves, Steel Stems extra.

Poppet Air Valves

These Valves are intended for use on pipe lines to permit air to enter when the water is being drawn off, and allow air to escape when pipes are being refilled.
Designed for pressures not exceeding 200 pounds.

Fig. 1309
Poppet Air Valve

Poppet Air Valves

Size.....	1/2	3/4	1	1 1/4	1 1/2	2
Each.....	3.50	5.75	7.00	9.00	12.00	*10.00

*Sizes to 2 inches, all Bronze. Size 2 inches, Iron body, Bronze mounted.

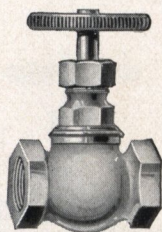


Fig. 1310
Finished Globe Valve
Brass Wheel

Special Valves



Fig. 1311. Gas Log Valve

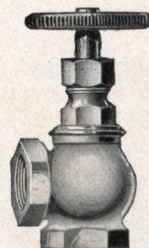


Fig. 1312
Finished Angle Valve
Brass Wheel

Size.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$
Plain.....	2.10	2.25	2.50
N. P. Mountings.....	2.35	2.50	2.75

Extra charge for Stems longer than 6 inches.

With Brass Wheels									
Size.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Finished, Globe and Angle, each.....	2.75	2.75	3.00	3.15	3.50	4.25	5.60	7.00	10.25
Nickel-plated, Globe and Angle, each....	3.25	3.25	3.50	3.70	4.10	4.90	6.30	7.75	11.25
With Wood Wheels									
Size.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Finished, Globe and Angle, each.....	1.90	1.90	2.00	2.15	2.50	3.25	4.35	5.75	9.00
Nickel-plated, Globe and Angle, each....	2.30	2.30	2.40	2.45	2.85	3.65	4.80	6.25	9.75

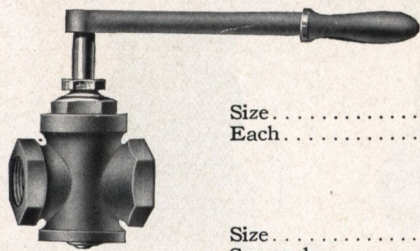


Fig. 1313
Throttle Valve

Throttle Valves—Brass—Screwed

For Steam Pressures to 125 Pounds

Size.....	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Each.....	10.00	11.50	14.00	20.00	25.00	35.00	47.00

Iron Body Throttle Valves

For Steam Pressures to 125 Pounds

Size.....	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Screwed.....	10.00	12.50	15.00	22.50	30.00	40.00	50.00	60.00
Flanged.....	11.00	13.50	16.50	24.00	32.00	42.50	53.00	64.00

Butterfly and Whistle Valves

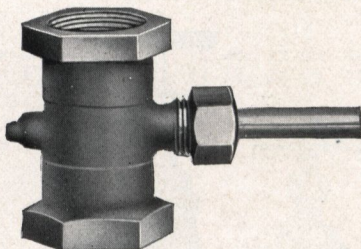


Fig. 1314. Brass Butterfly Valve

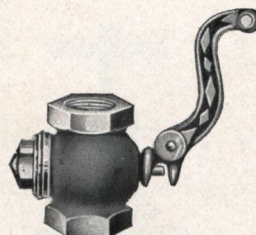


Fig. 1315. Brass Whistle Valve, Heavy Pattern

Butterfly Valves

Size.....	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	5	6
Brass, Screwed.....	3.10	4.40	5.65	6.75	10.00	13.75	21.00	.....	.....	.....	.....
Brass, Flanged.....	.....	.....	.....	14.00	21.00	27.00	42.00	.....	.....	.....	.....
Iron Body, Screwed.....	.....	.....	6.35	7.00	8.00	9.50	12.00	16.00	18.50	28.50	42.50
Iron Body, Flanged.....	.....	.....	7.50	8.50	9.50	11.50	15.00	19.00	22.00	32.00	47.00

Brass Whistle Valves

Size.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Each.....	2.50	3.00	3.50	5.00	6.00	9.00	18.00	27.00

Ball Check Valves—Horizontal, Angle and Vertical

Size.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Each.....	.85	.95	1.10	1.60	2.30	3.50	5.30	7.50	11.50	18.00	27.00
With Drain Cock.....	...	...	1.50	2.00	2.70	3.90	5.70	7.90	11.90	18.50	27.50

Brass Balls

Diameter.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{15}{16}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2	$2\frac{1}{4}$	$2\frac{3}{8}$
Each.....	.20	.30	.45	.55	.65	.70	.90	1.25	2.10	2.60	3.30	4.00
Diameter.....	$2\frac{1}{2}$	$2\frac{3}{4}$	3	$3\frac{1}{4}$	$3\frac{1}{2}$	$3\frac{3}{4}$	4	$4\frac{1}{2}$	5	$5\frac{1}{2}$	6	
Each.....	4.70	5.30	6.10	7.00	8.00	9.00	10.50	12.50	14.00	17.50	21.50	

Guaranteed spherical. Sizes above $1\frac{1}{4}$ inches are cast hollow.

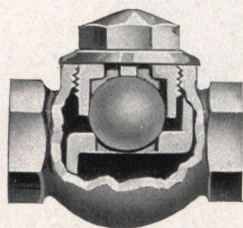


Fig. 1316

Jenkins Disc Brass Valves

Special Pattern—125 Pounds Working Steam Pressure

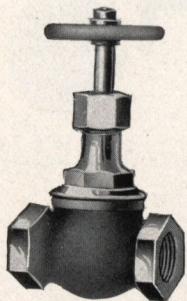


Fig. 1320. Globe Valve

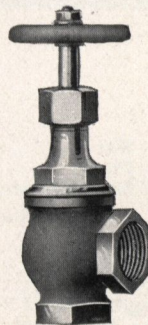
Jenkins Disc Brass Valves
125 Pounds

Fig. 1321. Angle Valve

Jenkins Disc Brass Valves—For Pressures to 125 Pounds

Size, inches.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Globe and Angle, each.....	1.10	1.10	1.25	1.60	2.20	2.80	4.00	5.50	8.75	15.75	22.00

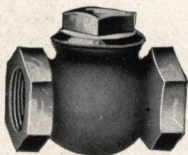


Fig. 1322. Horizontal Check Valve

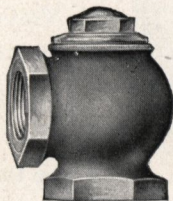


Fig. 1323. Angle Check Valve

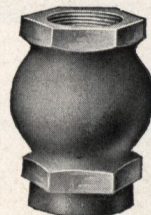


Fig. 1324. Vertical Check Valve

Jenkins Disc Brass Valves—For Pressures to 125 Pounds

Sizes, inches.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
All styles, each.....	1.10	1.10	1.20	1.30	1.90	2.60	3.60	5.00	7.50	13.50	21.00

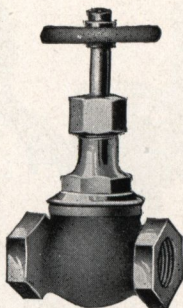


Fig. 1325. Globe Valve

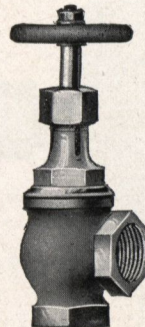
Jenkins Disc Brass Valves
150 Pounds

Fig. 1326. Angle Valve

Jenkins Disc Brass Valves—For Pressures to 150 Pounds

Size, inches.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Globe and Angle, each.....	1.10	1.10	1.25	1.60	2.20	2.80	4.00	5.50	8.75	15.75	22.00

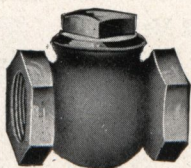


Fig. 1327. Horizontal Check Valve

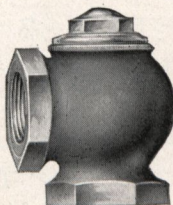


Fig. 1328. Angle Check Valve

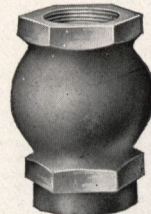


Fig. 1329. Vertical Check Valve

Jenkins Disc Brass Valves—150 Pounds Pressure

Size, inches.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
All styles, each.....	1.10	1.10	1.20	1.30	1.90	2.60	3.60	5.00	7.50	13.50	21.00

Iron Body, Brass Mounted Valves

Jenkins Disc, Iron Body, Screw End and Top
Globe and Angle Valves

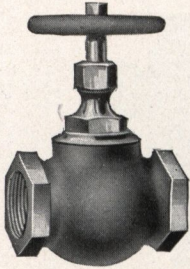


Fig. 1330. Globe

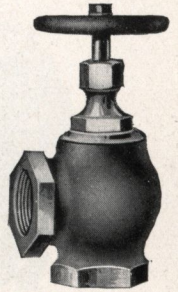


Fig. 1331. Angle

For 125 Pounds Working Pressure

Size.....	2	2½	3
Screwed, each.....	7.25	11.00	16.00
Flanged, each.....	8.50	13.00	18.00

Jenkins Disc Iron Body Valves

For 125 Pounds Working Pressure

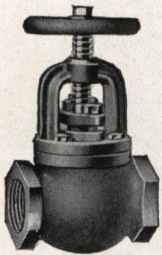


Fig. 1332. Globe, Screwed

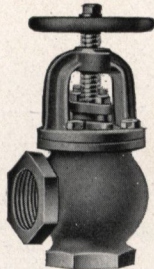


Fig. 1333. Angle Screwed

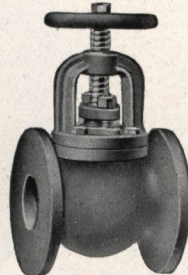


Fig. 1334. Globe Flanged

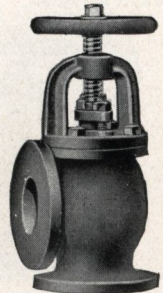


Fig. 1335. Angle Flanged

Jenkins Disc Iron Body Valves—125 Pounds Pressure

Size, inches.....	2	2½	3	3½	4	5	6	7	8	10	12
Globe and Angle, Screwed.....	10.00	12.00	16.75	19.50	24.00	40.00	48.00	80.00	90.00	130.00	185.00
Globe and Angle, Flanged.....	11.75	14.00	18.50	21.50	26.00	42.00	50.00	80.00	90.00	130.00	185.00

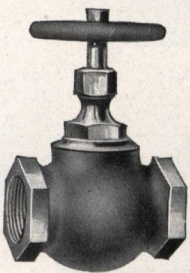


Fig. 1336
Globe Valve



Fig. 1337
Angle Valve

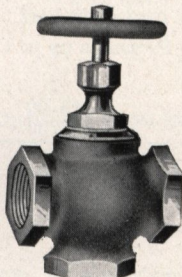


Fig. 1338
Cross Valve

Standard Iron Body Valves

For Working Steam Pressures Up to 125 Pounds

Standard Iron Body Valves—Screwed

Size, inches.....	1¼	1½	2	2½	3
Globe and Angle, each.....	2.75	3.50	5.40	7.35	9.80
Cross Valves, each....	....	....	6.50	9.00	12.50

Standard Iron Body Valves—Flanged

Size, inches.....	1¼	1½	2	2½	3
Globe and Angle, each.....	3.85	4.80	7.00	9.00	12.50
Cross Valves, each....	....	....	9.00	11.75	16.50

Template for Drilling, page 115.

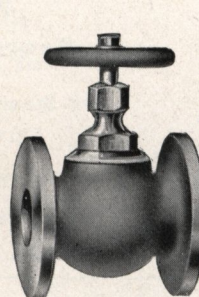


Fig. 1339
Globe Valve

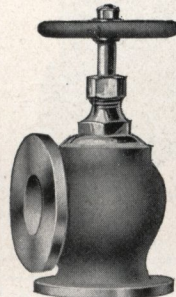


Fig. 1339A
Angle Valve

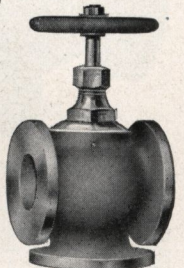


Fig. 1339B
Cross Valve

Standard Iron Body Brass Mounted Valves

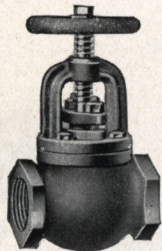


Fig. 1340. Globe Valve

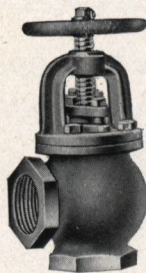


Fig. 1341. Angle Valve

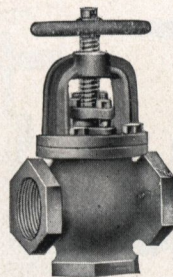


Fig. 1342. Cross Valve

Standard Iron Body Valves—Screwed
For 125 Pounds Pressure

Size, inches.....	2	2½	3	3½	4	4½	5	6	7	8	10	12
Globe and Angle, each....	7.00	9.00	12.50	15.25	19.00	24.00	27.00	37.50	63.00	72.00	114.00	170.00
Cross Valves, each.....	8.70	11.75	16.25	20.00	23.50	30.65	35.25	47.25	78.00	92.00	162.00	240.00

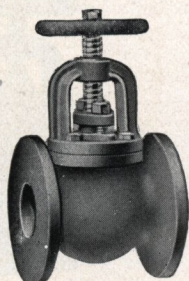


Fig. 1343. Globe Valve

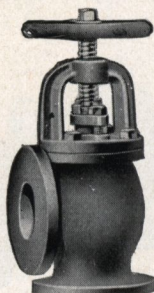


Fig. 1345. Angle Valve

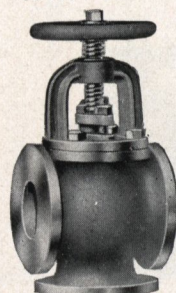


Fig. 1346. Cross Valve

Standard Iron Body Valves—Flanged—125 Pounds Pressure

Size, inches.....	2	2½	3	3½	4	4½	5	6	7	8	10	12
Globe and Angle, each....	8.60	10.75	15.00	18.50	22.50	27.50	31.00	42.00	68.00	77.00	123.00	187.00
Cross Valves, each.....	11.00	14.50	20.00	25.00	28.50	36.00	41.00	54.00	85.00	100.00	175.00	265.00

Medium Iron Body Valves

Screwed and Flanged

For Steam Working Pressures up to 175 Pounds

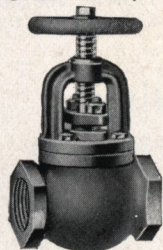


Fig. 1347

Size.....	2	2½	3	3½	4	4½
Globe and Angle, Screwed.....	13.00	16.00	20.00	24.00	28.00	35.00
Globe and Angle, Flanged.....	15.00	18.00	23.00	28.00	33.00	40.00
Size.....	5	6	7	8	10	12
Globe and Angle, Screwed.....	42.00	50.00	80.00	90.00	135.00	190.00
Globe and Angle, Flanged.....	47.00	55.00	85.00	95.00	145.00	200.00

Extra Heavy Iron Body Valves

With Yoke

Screwed and Flanged

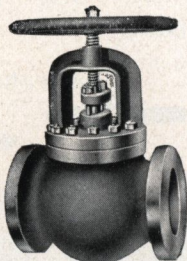
For Steam Working Pressures
Up to 250 Pounds

Fig. 1348. Globe Valve

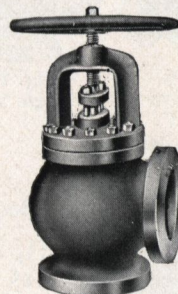


Fig. 1349. Angle Valve

Screwed and Flanged

Screwed and Flanged										
Size, inches.....	2	2½	3	3½	4	4½	5	6		
Globe and Angle, Screwed, each.....	26.00	33.00	37.00	42.00	46.00	56.00	61.00	75.00		
Size.....	2	2½	3	3½	4	4½	5	6	7	8
Globe and Angle, Flanged, each	27.50	35.00	40.00	45.00	50.00	60.00	65.00	80.00	100.00	120.00
									200.00	300.00

Template for Drilling, page 115, Standard; Extra Heavy, page 123.

Standard Iron Body Check Valves

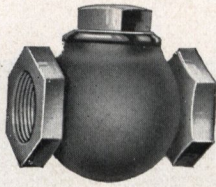


Fig. 1350. Horizontal

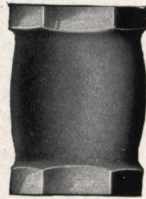


Fig. 1351. Vertical

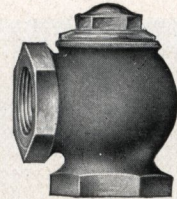


Fig. 1352. Angle

Standard Iron Body Screwed Check Valves—125 Pounds Pressure

Size, inches.....	2	2½	3	3½	4	4½	5	6	7	8	10	12
Horizontal.....	3.60	6.50	8.90	12.25	14.25	19.00	22.00	30.00	45.00	57.00	105.00	155.00
Vertical.....	7.00	9.50	12.50	17.00	21.00	.....	33.00	40.00	.....	73.00	.....	.....
Angle.....	3.60	6.50	8.90	12.25	14.25	19.00	22.00	30.00	45.00	57.00	105.00	155.00

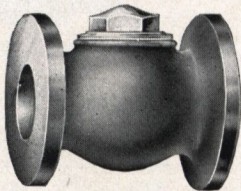


Fig. 1353. Horizontal

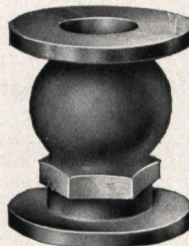


Fig. 1354. Vertical

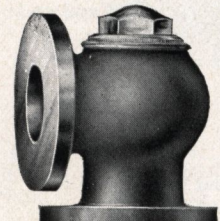


Fig. 1355. Angle

Standard Iron Body Flanged Check Valves—125 Pounds Pressure

Size, inches.....	2	2½	3	3½	4	4½	5	6	7	8	10	12
Horizontal.....	5.25	8.25	11.50	15.50	18.00	22.50	26.00	35.00	50.00	62.00	115.00	175.00
Vertical.....	8.75	11.50	15.00	20.00	25.00	.....	37.00	45.00	.....	78.00	.....	.....
Angle.....	5.25	8.25	11.50	15.50	18.00	22.50	26.00	35.00	50.00	62.00	115.00	175.00

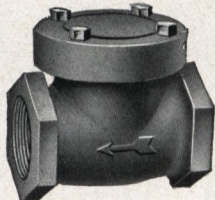
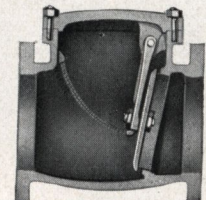


Fig. 1356

Standard Swing Check Valves

Iron Body, Brass Seat
For Steam Working Pressures
Up to 125 Pounds



Section

Standard Iron Body Swing Check Valves

Size, inches.....	2½	3	3½	4	4½	5	6	8
Screwed.....	12.00	13.50	17.50	20.00	26.00	30.00	36.00	70.00
Flanged.....	14.50	17.00	21.00	24.00	30.00	34.00	41.00	75.00

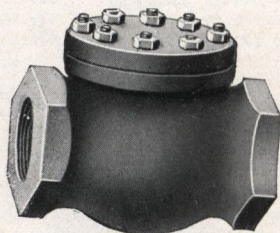


Fig. 1357. Screwed

Extra Heavy Swing Check Valves

For Steam Working Pressures
to 250 Pounds

May be used in Horizontal or Vertical position

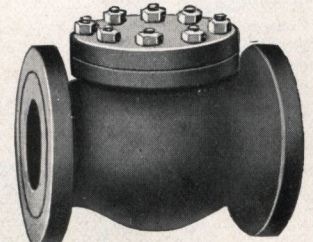


Fig. 1358. Flanged

Extra Heavy Iron Body Swing Check Valves

Size, inches.....	2	2½	3	3½	4	4½
Extra Heavy Screwed Valves, each.....	26.00	33.00	37.00	42.00	46.00	56.00
Extra Heavy Flanged Valves, each.....	27.50	35.00	40.00	45.00	50.00	60.00
Size, inches.....	5	6	7	8	10	12
Extra Heavy Screwed Valves, each.....	61.00	75.00	95.00	114.00	119.00	.....
Extra Heavy Flanged Valves, each.....	65.00	80.00	100.00	120.00	200.00	300.00

Drilling Templates, page 115, Standard; Extra Heavy, page 123.

Vertical Check Valves

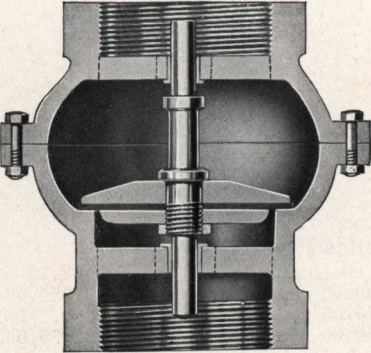


Fig. 1360. Screwed. Single Gate
Size 9 inches and under

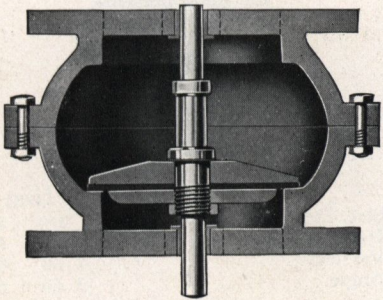


Fig. 1361. Flanged. Single Gate
Size 9 inches and under

Vertical Check Valves—Gates Rubber Faced

Size.....	2	2½	3	4	5	6	7	8	10	12	14	16	18	20	24
Screwed.....	7.50	8.00	12.70	16.50	22.50	29.00	32.50	37.00	102.00	135.00	.....	.....	.....	.....	.....
Flanged.....	8.00	8.50	12.70	16.50	22.00	28.00	31.50	36.50	102.00	135.00	166.00	221.00	270.00	389.00	493.00
Hub End.....	8.00	8.50	12.70	16.50	22.00	30.00	35.00	39.00	104.00	137.50	168.00	224.00	273.00	392.00	498.00
End to End, Screwed.....	7¾	7¾	8½	10¾	12¾	13½	13½	14	17½	.....	.....	.....	.....	.....	.....
End to End, Flanged.....	4¾	5¼	6¼	6¾	9¾	9¾	9¾	10¾	15½	18¾	18¾	21¾	23¼	23¾	29½
End to End, Hub.....	9½	9¾	11	12½	16¾	17¾	.....	19¾	22¾	23¼	27¼	30	31	33½	40½

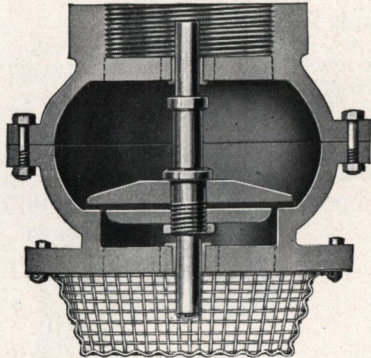


Fig. 1362. Screwed. Single Gate
Sizes to 9 inches

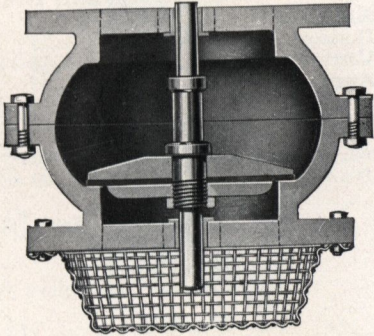


Fig. 1363. Flanged. Single Gate
Sizes to 9 inches

Vertical Foot Valves

Iron Body
Gates Rubber Faced
Brass Screen
Tested at 100 Pounds

Vertical Foot Valves

Size.....	2	2½	3	4	5	6	7	8	10	12	14	16	18
Screwed.....	12.25	12.75	17.00	21.50	28.00	35.00	40.50	47.25	93.50	127.50	.....	.....	.....
Flanged.....	12.50	13.00	17.00	21.50	27.50	34.50	40.00	46.00	93.50	126.50	148.50	193.50	239.50
Hub End.....	.....	.....	.....	.....	.....	35.25	41.00	49.00	94.50	127.50	150.50	196.50	242.50
Over All Height, Screwed.....	9½	9¼	11	12¾	14¾	15¾	14¾	15¾	.....	.....	.....	.....	.....
Over All Height, Flanged.....	8	8¾	9¾	11¼	13½	14¼	13	14½	10	11	12¾	13¼	13¾
Over All Height, Hub.....	10¼	10¾	12¼	13¾	16¾	17¾	.....	18¾	13¼	14¼	16¾	17¾	18½

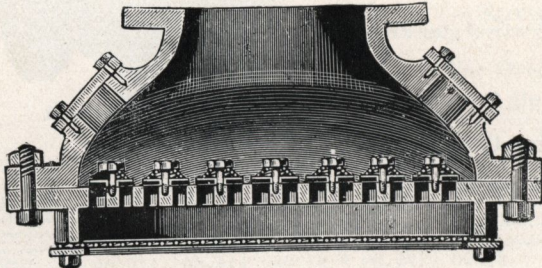


Fig. 1364. Showing Multiple Gates used in Check
and Foot Valves in sizes larger than 9 inches

Vertical Check and Foot Valves

All sizes 9 inches and under are made with a single gate, the stem and stem nut are made of bronze and the bearings through which stem works are bushed with bronze.

All sizes above 9 inches are made with a gate plate, and a nest of small gates (see Fig. 1364), varying in number according to size of Valve. The gates are faced with solid rubber discs, all other parts of gates (washers, spiral springs and gate bolts) being made of bronze.

All sizes above 9 inches are made with hand holes, thus making gates accessible for cleaning purposes at all times without breaking pipe connections.

The area of Valve openings, in all sizes, averages from 10 to 20 per cent., more than the area of connecting pipe.

Penberthy Regrinding Brass Valves

Medium Pattern. Screw Ends

For 200 Pounds Working Pressure

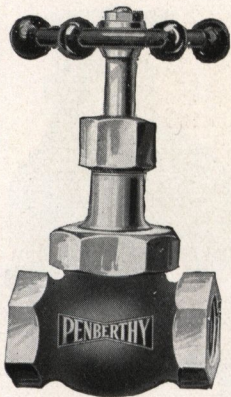


Fig. 1370. Globe

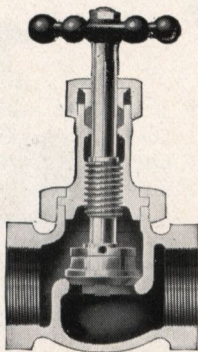


Fig. 1370. Section



Fig. 1372. Angle

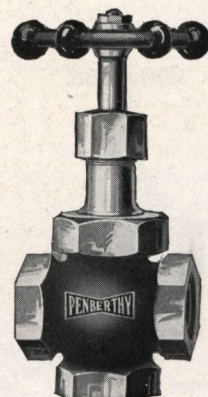


Fig. 1373. Cross

Brass Regrinding Globe, Angle and Cross Valves

Size, inches.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Globe Valves, Brass, each.....	.70	.70	.85	1.15	1.45	2.00	2.80	3.90	6.20	12.00	16.50
Angle Valves, Brass, each.....	.70	.70	.85	1.15	1.45	2.00	2.80	3.90	6.20	12.00	16.50
Cross Valves, Brass, each.....	1.00	1.00	1.00	1.50	2.00	2.70	3.50	5.10	8.00	16.00	24.00
Globe Valves, finished all over, with Finished Brass Wheel, Brass, each.....	1.75	1.90	2.15	2.50	3.10	3.65	5.25	7.25	10.75	22.00	33.50
Angle Valves, finished all over, with Finished Brass Wheel, Brass, each.....	1.75	1.90	2.15	2.50	3.10	3.65	5.25	7.25	10.75	22.00	33.50
Cross Valves, finished all over, with Finished Brass Wheel, Brass, each.....	2.40	2.60	2.90	3.30	4.20	4.90	7.00	9.70	14.30	29.30	44.70
Face to Face Screw Ends, Globe.....	$1\frac{1}{2}$	$1\frac{1}{4}$	$2\frac{1}{16}$	$2\frac{3}{8}$	$2\frac{1}{8}$	$3\frac{3}{8}$	$3\frac{3}{4}$	$4\frac{3}{8}$	$5\frac{1}{4}$	$6\frac{3}{4}$	8
Center to Face Screw Ends, Angle.....	$\frac{3}{4}$	$\frac{2}{3}$	$1\frac{1}{32}$	$1\frac{3}{16}$	$1\frac{1}{2}$	$1\frac{1}{8}$	$1\frac{7}{8}$	$2\frac{3}{16}$	$2\frac{5}{8}$	$3\frac{3}{8}$	4
Center to Bottom of Body.....	$\frac{15}{32}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{15}{16}$	$1\frac{1}{8}$	$1\frac{1}{8}$	$1\frac{9}{16}$	$1\frac{11}{16}$	$2\frac{9}{32}$	$2\frac{29}{32}$

Brass Regrinding Horizontal, Vertical and Angle Check Valves



Fig. 1374. Horizontal



Fig. 1375. Vertical

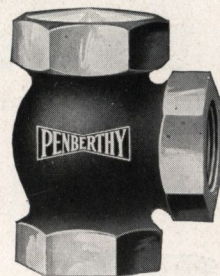


Fig. 1376. Angle

Regrinding Check Valves

Size, inches.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Check Valves, Brass Horizontal, Angle or Vertical Regular, each.....	.50	.50	.60	.85	1.15	1.55	2.30	3.25	5.20	10.00	14.00	19.75	30.75
Check Valves, Brass, Horizontal, Angle or Vertical, Finished, each.....	.75	.75	.90	1.30	1.75	2.40	3.50	5.00	7.80	12.50	17.50	25.00	37.00

Regrinding Swing Check Valves

The Penberthy Regrinding Swing Check Valve incorporates all the latest improvements in a high grade Regrinding Valve combined with a theoretically correct designed valve pattern, in which all pockets have been eliminated, thus producing the least friction and the minimum resistance to the fluid when passing through the valve diaphragm. The swing hinge and valve disc are placed on such an angle and position as to make the valve absolutely sensitive and quick closing. The swing hinge also has a stop which allows the Valve to open only to its horizontal position, which gives the Valve an opening sufficiently large to allow the fluid to go through without any friction and at the same time makes the Valve work more sensitively, as soon as the pressure is released.

Size, inches.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Brass, Screw Ends, each.....	1.25	1.25	1.30	1.75	2.25	3.25	4.25	6.25	11.50	16.00

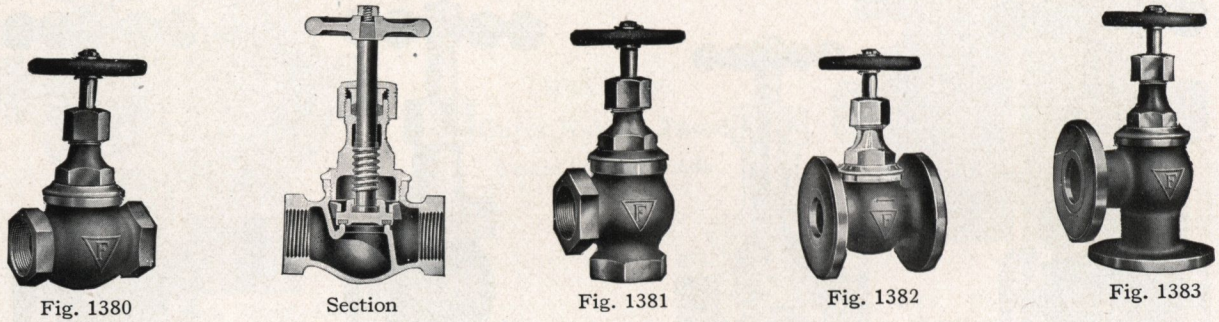


Fig. 1377. Swing Check

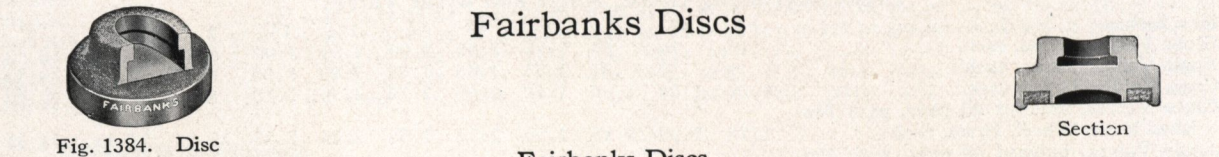
Fairbanks Bronze Valves

Renewable Vulcabeston Ring Disc

150 Pounds Steam, 175 Pounds Water Working Pressure



Fairbanks Bronze Valves											
Size.....	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Screwed, each.....	1.10	1.10	1.25	1.60	2.20	2.80	4.00	5.50	8.75	15.75	22.00
Flanged, each.....				4.00	5.00	6.00	9.00	11.00	16.50	25.00	34.00

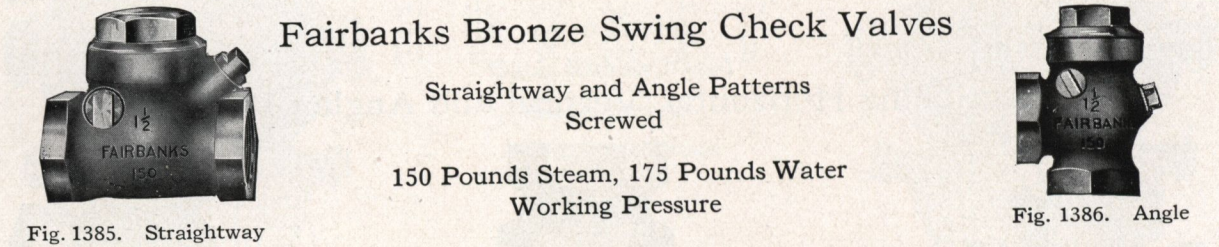


Fairbanks Discs											
Size.....	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Each.....	.08	.08	.08	.10	.13	.17	.24	.32	.48	.80	1.10

Fairbanks Bronze Swing Check Valves

Straightway and Angle Patterns
Screwed

150 Pounds Steam, 175 Pounds Water
Working Pressure

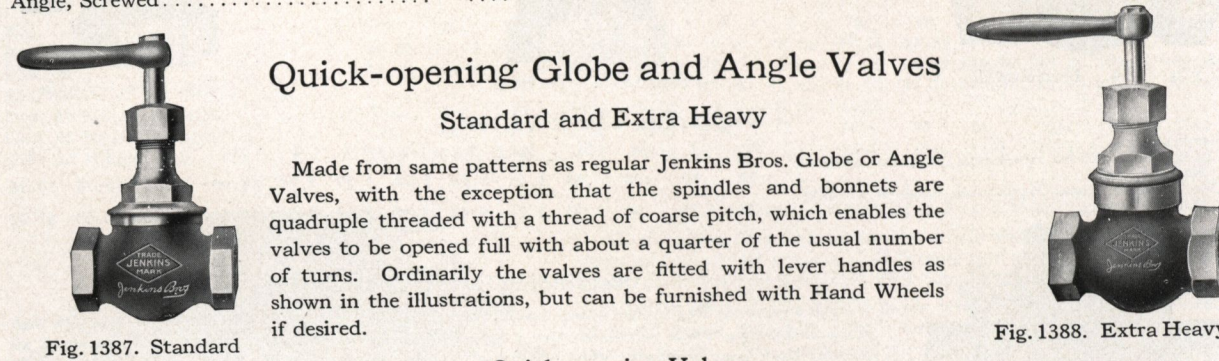


Bronze Swing Check Valves											
Size.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	
Straightway, Screwed.....	1.80	1.80	2.00	2.25	2.80	3.65	4.75	6.75	15.00	24.00	
Angle, Screwed.....			2.00	2.25	2.80	3.65	4.75	6.75	15.00	24.00	

Quick-opening Globe and Angle Valves

Standard and Extra Heavy

Made from same patterns as regular Jenkins Bros. Globe or Angle Valves, with the exception that the spindles and bonnets are quadruple threaded with a thread of coarse pitch, which enables the valves to be opened full with about a quarter of the usual number of turns. Ordinarily the valves are fitted with lever handles as shown in the illustrations, but can be furnished with Hand Wheels if desired.



Quick-opening Valves						
Size.....	1/2	3/4	1	1 1/4	1 1/2	2
Standard Globe or Angle.....	2.30	2.90	3.50	4.30	6.40	8.40
Extra Heavy Globe or Angle.....	4.30	5.00	6.50	7.80	10.20	14.00

Always specify the service for which the Valves are desired, so that hard or soft disc can be furnished.
Also state whether Valve is wanted Standard or extra heavy, and whether with wheel or lever handle, and Globe or Angle pattern.

Fairbanks Iron Body Globe and Angle Valves

Renewable Vulcabeston Disc Ring

350 Pounds Hydraulic Test Pressure, 150 Pounds Steam or Water Working Pressure

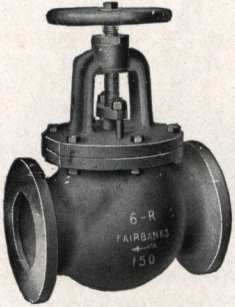


Fig. 1390. Flanged Globe

Iron Body Globe and Angle Valves—Screwed and Flanged

For 150 Pounds Working Pressure

Size, inches.....	2	2½	3	3½	4	4½	5	6	7	8
Globe Valve, Screw End.....	10.00	12.00	16.75	19.50	24.00	32.00	40.00	48.00	80.00	90.00
Angle Valve, Screw End.....	10.00	12.00	16.75	19.50	24.00	32.00	40.00	48.00	80.00	90.00
Globe Valve, Flange End.....	11.75	14.00	18.50	21.50	26.00	34.00	42.00	50.00	80.00	90.00
Angle Valve, Flange End.....	11.75	14.00	18.50	21.50	26.00	34.00	42.00	50.00	80.00	90.00
Vulcabeston Disc Ring.....	.16	.22	.26	.37	.45	.53	.58	.78	.95	1.10



Fig. 1391. Heavy

Heavy and Extra Heavy Iron Body Valves

Bronze Working Parts
Bevel Disc

Heavy—175 Pounds Steam
Working Pressure

Extra Heavy—250 Pounds Steam
Working Pressure

Screwed and Flanged



Fig. 1392. Extra Heavy

Iron Body Globe and Angle Valves—Screwed and Flanged

Heavy—175 Pounds Working Pressure

Size, inches.....	2	2½	3	3½	4	4½	5	6	7	8	10	12
Globe Valve, Screw End.....	13.00	16.00	20.00	24.00	28.00	35.00	42.00	50.00	80.00	90.00	.....	.....
Angle Valve, Screw End.....	13.00	16.00	20.00	24.00	28.00	35.00	42.00	50.00	80.00	90.00	.....	.....
Globe Valve, Flange End.....	15.00	18.00	23.00	28.00	33.00	40.00	47.00	55.00	85.00	95.00	145.00	200.00
Angle Valve, Flange End.....	15.00	18.00	23.00	28.00	33.00	40.00	47.00	55.00	85.00	95.00	145.00	200.00

Extra Heavy—250 Pounds Working Pressure

Size, inches.....	2	2½	3	3½	4	4½	5	6	7	8	10	12
Globe Valve, Screw End.....	26.00	33.00	37.00	42.00	46.00	56.00	61.00	75.00	95.00	114.00	.....	.....
Angle Valve, Screw End.....	26.00	33.00	37.00	42.00	46.00	56.00	61.00	75.00	95.00	114.00	.....	.....
Globe Valve, Flange End.....	27.50	35.00	40.00	45.00	50.00	60.00	65.00	80.00	100.00	120.00	200.00	300.00
Angle Valve, Flange End.....	27.50	35.00	40.00	45.00	50.00	60.00	65.00	80.00	100.00	120.00	200.00	300.00

Iron Body Straightway Swing Check Valves

Standard, 125 Pounds, Extra Heavy, 250 Pounds Steam Working Pressure



Fig. 1393. Screwed



Fig. 1394. Flanged



Fig. 1395. Hub End

Iron Body Straightway Swing Check Valves

Size.....	2	2½	3	3½	4	4½	5	6	7	8	10	12
Standard, Screwed.....	12.00	12.00	13.50	17.50	20.00	26.00	30.00	36.00	55.00	70.00	110.00	160.00
Standard, Flanged.....	14.50	14.50	17.00	21.00	24.00	30.00	34.00	41.00	60.00	75.00	115.00	168.00
Standard, Hub End.....	.....	.....	.....	27.00	.....	.....	.....	45.00	.....	82.50	125.00	185.00
Extra Heavy, Screwed.....	26.00	33.00	37.00	42.00	46.00	.....	61.00	75.00	95.00	114.00	190.00	.....
Extra Heavy, Flanged.....	27.50	35.00	40.00	45.00	50.00	.....	65.00	80.00	100.00	120.00	200.00	300.00

Jenkins Bros. Brass Valves

For 150 Pounds Working Steam Pressure, or 250 Pounds Working Water Pressure

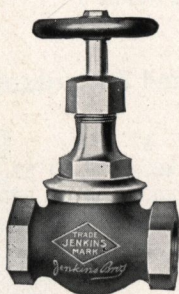


Fig. 1400. Globe, Screwed



Fig. 1401. Angle, Screwed

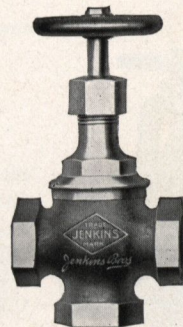


Fig. 1402. Cross Valve, Screwed

Jenkins Bros. Brass Valves—Screwed—150 Pounds Steam Pressure

Size.....	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Globe and Angle.....	1.10	1.10	1.25	1.60	2.20	2.80	4.00	5.50	8.75	15.75	22.00
Cross Valves.....	....	1.70	2.00	2.25	2.50	3.25	4.75	6.25	9.50	20.00	27.50

Jenkins Bros. Brass Valves—Flanged



Fig. 1403. Globe, Flanged

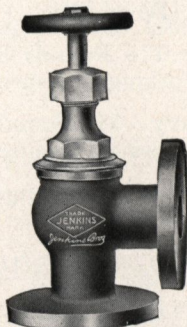


Fig. 1404. Angle, Flanged

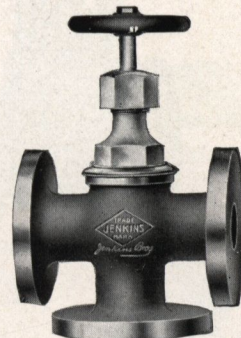
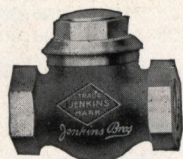


Fig. 1405. Cross Valve, Flanged

Jenkins Bros. Brass Valves—Flanged—150 Pounds Steam Pressure

Size.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Globe and Angle.....	3.50	4.00	4.00	5.00	6.00	9.00	11.00	16.50	25.00	34.00
Cross Valves.....	....	....	7.00	8.00	9.00	12.00	15.00	23.00	33.00	44.00
Face to Face, Globe.....	2 1/8	3	3 1/8	3 3/8	4	4 3/8	4 7/8	6	6 3/4	7 1/2
Center to Face, Angle.....	1 7/8	2 1/8	2 1/8	2 3/8	2 3/8	2 1/2	3 1/8	3 3/4	4 1/4	4 1/8

Jenkins Bros. Brass Check Valves

Fig. 1406
Horizontal CheckFig. 1407
Angle CheckFig. 1408
Vertical CheckFig. 1409
Horizontal Check, Flanged

Jenkins Bros. Brass Check Valves—150 Pounds Steam Pressure

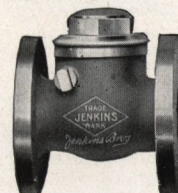
Size.....	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Horizontal, Vertical, Angle, Screwed.....	1.10	1.10	1.20	1.30	1.90	2.60	3.60	5.00	7.50	14.00	21.00
Horizontal, Vertical, Angle, Flanged.....	....	....	....	4.00	5.00	6.00	8.00	10.00	15.00	23.00	32.00
Face to Face, Flanged.....	....	....	....	3 1/8	3 3/8	4	4 3/8	4 7/8	6	6 3/4	7 1/2

Jenkins Bros. Brass Swing Check Valves

150 Pounds Steam Pressure

Fig. 1409A
Swing Check Valve

Size.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Screwed.....	1.20	1.20	1.30	1.90	2.60	3.60	5.00	7.50	14.00	21.00
Flanged.....	....	....	4.00	5.00	6.00	8.00	10.00	15.00	23.00	32.00
Face to Face, Flanged.....	3	3 1/8	3 3/8	3 3/2	4	4 3/8	4 7/8	6	6 3/4	7 1/2
Diameter of Flanges.....	2 3/8	3	3 1/2	4	4 1/2	5	6	6	7	7 1/2

Fig. 1409B
Swing Check, Flanged

Jenkins Bros. Brass Valves—Extra Heavy

Extra Heavy Globe, Angle and Cross Valves—Screwed

Suitable for 300 Pounds Working Steam Pressure
or 500 Pounds Working Water Pressure

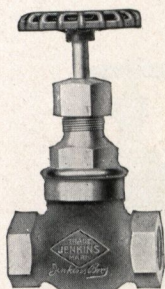


Fig. 1410
Globe, Screwed

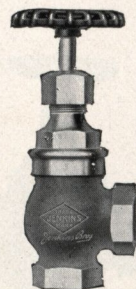


Fig. 1411
Angle, Screwed

Jenkins Bros. Brass Valves—Extra Heavy—Screwed

Size.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Globe and Angle, Screwed.....	3.00	3.50	4.00	5.00	6.50	8.25	11.00	16.00	33.00	45.00
Cross Valves, Screwed.....			4.75	5.75	7.50	9.50	12.50	18.00	.....	.....

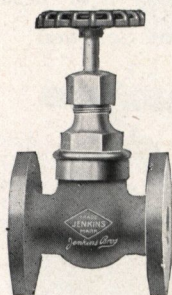


Fig. 1412
Globe, Flanged

Extra Heavy Globe, Angle and Cross Valves

Suitable for 300 Pounds Working Steam Pressure
or 500 Pounds Working Water Pressure

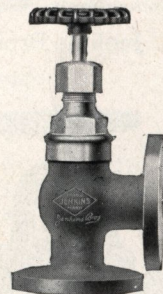


Fig. 1413
Angle, Flanged

Jenkins Bros. Brass Valves, Extra Heavy—Flanged

Size.....	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Globe and Angle, Flanged.....	6.00	7.50	10.00	13.00	17.00	24.00	43.00	57.00
Cross Valves, Flanged, prices on application.								
Face to Face, Globe.....	3 3/4	4 1/4	4 3/4	5 1/2	6 1/4	7 1/4	8 1/4	9 1/2
Center to Face, Angle.....	2 1/8	2 1/2	2 7/8	3 1/4	3 11/16	4 1/8	4 3/4	5 1/8

Jenkins Bros. Brass Valves—Extra Heavy

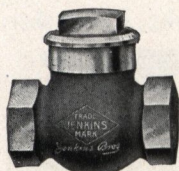


Fig. 1414
Horizontal Check



Fig. 1415
Angle Check

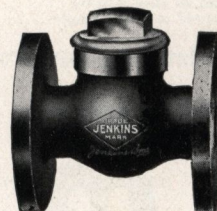


Fig. 1416. Horizontal
Check, Flanged

Jenkins Bros. Brass Extra Heavy Check Valves

300 Pounds Steam Pressure

Size.....	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Horizontal and Angle, Screwed.....	3.00	3.50	4.50	5.50	7.75	11.50	21.00	30.00
Horizontal and Angle, Flanged.....	5.00	6.50	8.50	10.50	14.25	20.00	31.00	42.00
Face to Face, Flanged, Horizontal.....	3 3/4	4 1/4	4 3/4	5 1/2	6 1/4	7 1/4	8 1/4	9 1/2

Jenkins Bros. Brass Extra Heavy Swing Check Valves

300 Pounds Steam Pressure

Size.....	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Swing Check, Screwed.....	3.00	3.50	4.50	5.50	7.75	11.50	21.00	30.00
Swing Check, Flanged.....	5.00	6.50	8.50	10.50	14.25	20.00	31.00	42.00
Face to Face, Screwed.....	2 11/16	3 1/2	4 1/8	4 5/8	5 3/8	6 1/4	7 1/2	8 3/4
Face to Face, Flanged.....	3 3/4	4 1/4	4 3/4	5 1/2	6 1/4	7 1/4	8 1/4	9 1/2
Diameter of Flanges.....	3 1/4	3 3/4	4 1/2	5	6	6 1/2	7 1/2	8 1/4

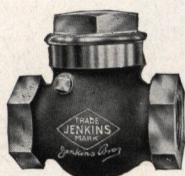


Fig. 1417. Horizontal
Swing Check

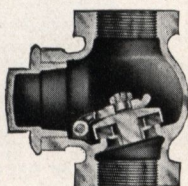


Fig. 1417
In Vertical Position

Jenkins Bros. Iron Body Valves



Fig. 1420 Globe, Screwed



Fig. 1421 Angle, Screwed



Fig. 1422 Globe, Flanged

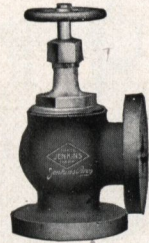


Fig. 1423 Angle, Flanged

Jenkins Bros. Iron Body, Brass Hub Valves

For 125 Pounds Working Steam Pressure or 175 Pounds Working Water Pressure

Size.....	1½	2	2½	3
Globe or Angle, Screwed.....	2.80	2.80	3.00	4.00
Globe or Angle, Flanged.....	3.80	3.80	4.40	5.40
	5.00	7.25	11.00	16.00
	6.60	8.50	13.00	18.00

Jenkins Bros. Iron Body Composition Mounted Valves—Standard Pattern, with Yoke, Screwed

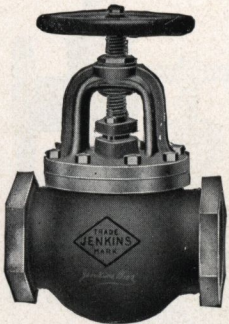


Fig. 1424 Globe, Yoked



Fig. 1425 Angle, Yoked

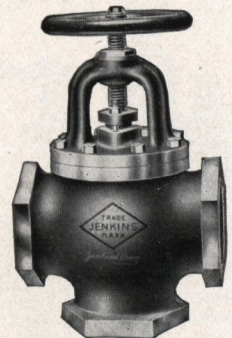


Fig. 1426 Cross, Yoked

Jenkins Bros. Screwed Iron Body Valves—150 Pounds Steam, 250 Pounds Water Pressure

Size.....	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
Globe or Angle, Screwed.....	10.00	12.00	16.75	19.50	24.00	32.00	40.00	48.00	80.00	90.00	121.00	130.00	185.00
Cross Valves, Screwed.....	16.00	21.00	26.00	30.00	42.00	45.00	58.00	90.00	100.00	183½	20	21½	25¾
End to End, Globe.....	6½	7¾	9¾	10	12	12¾	13¾	16	16½	18¾	20	21½	25¾
Center to End, Angle.....	3½	3¾	4½	5	6	6½	8	8¼	9¾	10	10¾	12¾	12¾

Jenkins Bros. Iron Body Composition Mounted Valves—Standard Pattern, with Yoke, Flanged

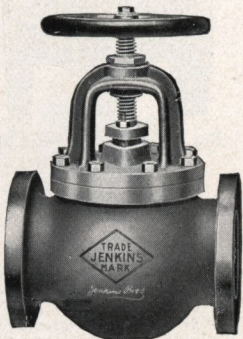


Fig. 1427 Globe, Flanged



Fig. 1428 Angle, Flanged

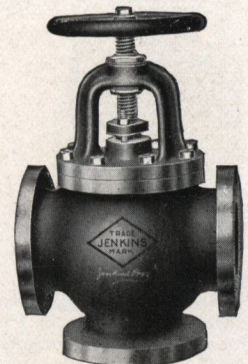


Fig. 1429 Cross, Flanged

Jenkins Bros. Flanged Iron Body Valves—150 Pounds Steam, 250 Pounds Water Pressure

Size.....	2	2½	3	3½	4	4½	5	6	7
Globe or Angle, Flanged.....	11.75	14.00	18.50	21.50	26.00	34.00	42.00	50.00	80.00
Cross Valves, Flanged.....	19.00	24.00	29.00	33.00	45.00	48.00	62.00	90.00	90.00
Face to Face, Globe.....	7½	7½	9¼	10	11¾	12½	13½	16	16¼
Center to Face, Angle.....	3¾	4½	4¾	5¾	5¾	6¼	6	8	8
Diameter Flanges.....	6	7	7½	8½	9	9¼	10	11	12½
Size.....	8	9	10	12	14	16	18	20	24
Globe or Angle, Flanged.....	90.00	121.00	130.00	185.00	334.00	400.00	540.00	620.00	1260.00
Cross Valves, Flanged.....	100.00								
Face to Face, Globe.....	18½	20	21¼	24½	30	34	38	42	50
Center to Face, Angle.....	9¼	10	10¾	12¼	15	17	19	21	25
Diameter Flanges.....	13½	15	16	19	21	23½	25	27½	32

Jenkins Bros. Iron Body Valves

Standard Pattern Globe and Angle Valves, with Extra Heavy Diameter Flanges
For 150 Pounds Working Steam Pressure, or 250 Pounds Working Water Pressure

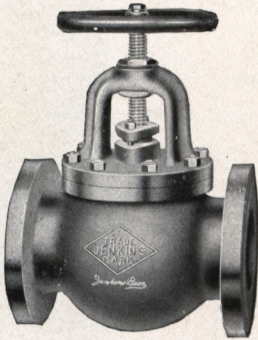


Fig. 1430. Flanged Globe

Standard Pattern with Extra Heavy
Diameter Flanges

150 Pounds Working Steam Pressure



Fig. 1431. Flanged Angle

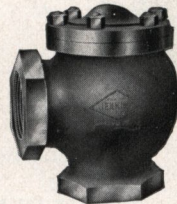
Jenkins Bros. Standard Iron Body Valves with Extra Heavy Diameter Flanges

Size.....	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
Globe or Angle.....	14.25	17.50	23.50	28.00	35.00	45.00	53.00	62.00	95.00	110.00	145.00	151.00	210.00
Face to Face, Globe.....	9	10	11¾	12½	13¾	14½	15½	17	18½	20	21¼	23	26
Center to Face, Angle.....	4½	5	5⅞	6¼	6⅞	7¼	7¾	8½	9¼	10	10⅞	11½	13
Diameter Flanges.....	6½	7½	8¼	9	10	10½	11	12½	14	15	16	17½	20½

Fig. 1432
Horizontal CheckJenkins Bros. Iron Body
Check Valves

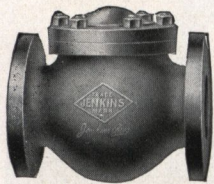
Horizontal, Angle and Vertical
Iron Body Check Valves

Standard Pattern, for 150 Pounds
Working Pressure

Fig. 1433
Angle Check

Jenkins Bros. Iron Body Check Valves—Screwed

Size.....	2	2½	3	3½	4	4½	5	6	7	8
Horizontal, Angle, or Vertical.....	8.00	11.00	14.00	17.00	20.00	25.00	30.00	40.00	65.00	80.00

Fig. 1434. Horizontal
Check, Flanged

Flanged

Jenkins Bros. Iron Body Check Valves, Flanged—150 Pounds Pressure

Size.....	2	2½	3	3½	4	4½	5	6	7	8
Horizontal, Angle, or Vertical.....	10.00	13.00	16.50	20.00	23.00	28.00	33.00	43.00	65.00	80.00
Face to Face, Horizontal....	7⅞	7½	9¼	10	11¾	12½	13⅞	16	16¼	18½
Center to Face, Angle.....	3⅞	4½	4⅞	5⅞	5⅞	6¼	6½	8	8¼	9¼
Diameter Flanges.....	6	7	7½	8½	9	9¼	10	11	12½	13½



Fig. 1435

Jenkins Bros. Iron Body
Swing Check Valves

Standard Pattern

For 150 Pounds Working Pressure

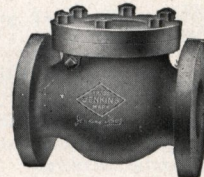


Fig. 1436

Jenkins Bros. Iron Body Swing Check Valves

Size.....	2	2½	3	3½	4	5	6	7	8	10
Screwed.....	13.50	13.50	15.50	20.00	23.00	34.00	40.00	61.00	77.50	120.00
Flanged.....	16.00	19.00	23.50	27.00	38.00	45.00	66.00	82.50	125.00	
Diameter Flanges.....	7	7½	8½	9	10	11	12½	13½	16	

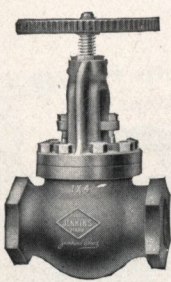


Fig. 1440. Globe

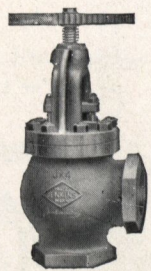


Fig. 1441. Angle

Jenkins Bros. Iron Body Valves

Extra Heavy Globe, Angle and
Cross Valves—Screwed

Suitable for 250 Pounds Working Steam Pressure
or 400 Pounds Working Water Pressure

Jenkins Bros. Extra Heavy Iron Body Valves—Screwed													
Size.....	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
Globe or Angle.....	16.00	19.00	24.00	28.00	38.00	44.00	53.00	70.00	100.00	110.00	165.00	180.00	230.00
Cross Valves.....		40.00	45.00	50.00	55.00	70.00	75.00	95.00	120.00	145.00			
End to End, Globe.....	7¾	9	10¼	11½	12¾	14	15	17	18	19½	21	23	26
Center to Face, Angle.....	3⅞	4½	5⅞	5¾	6¾	7	7½	8½	9	9¾	10½	11½	13

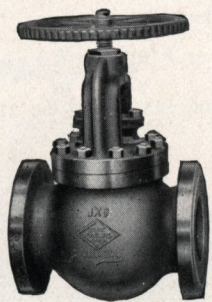


Fig. 1442. Globe

Extra Heavy Globe, Angle and
Cross Valves—Flanged

Suitable for 250 Pounds Working Steam Pressure
or 400 Pounds Working Water Pressure

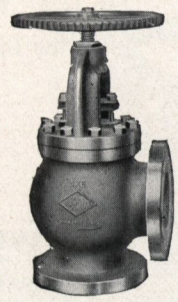


Fig. 1443. Angle

Jenkins Bros. Extra Heavy Iron Body Valves—Flanged													
Size.....	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
Globe or Angle.....	18.00	21.00	26.00	30.00	40.00	46.00	55.00	73.00	100.00	110.00	165.00	180.00	230.00
Cross Valves.....		43.00	50.00	55.00	60.00	75.00	80.00	100.00	125.00	150.00			
Face to Face, Globe.....	9	10	11¾	12½	13¾	14½	15½	17	18½	20	21¼	23	26
Center to Face, Angle.....	4½	5	5⅞	6¼	6¾	7¼	7¾	8½	9¼	10	10⅞	11½	13
Diameter of Flanges.....	6½	7½	8¼	9	10	10½	11	12½	14	15	16	17½	20

Jenkins Bros. Extra Heavy Check Valves

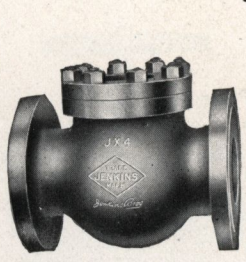


Fig. 1444
Horizontal, Flanged



Fig. 1445
Angle, Flanged

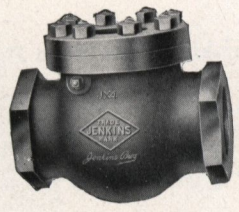


Fig. 1446
Swing Check, Screwed

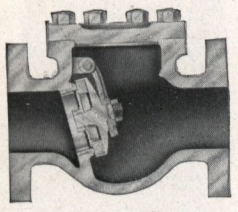


Fig. 1447
Swing Check, Flanged

Jenkins Bros. Extra Heavy Iron Body Check Valves

Jenkins Bros. Extra Heavy Iron Body Check Valves													
Size.....	2	2½	3	3½	4	4½	5	6	8				
Check Valve, Screwed, Horizontal and Angle.....	15.00	17.00	21.00	26.00	34.00	38.00	46.00	65.00	.....				
Check Valve, Flanged, Horizontal and Angle.....	16.00	19.00	23.00	28.00	36.00	40.00	48.00	67.00	.....				
End to End, Horizontal, Screwed.....	7¾	9	10¼	11½	12¾	14	15	17	19½				
Face to Face, Horizontal, Flanged.....	9	10	11¾	12½	13¾	14½	15½	17	20				
Center to End, Angle, Screwed.....	3⅞	4½	5⅞	5¾	6¾	7	7½	8½	9¾				
Center to Face, Angle, Flanged.....	4½	5	5⅞	6¼	6¾	7½	7¾	8½	10				
Swing Check Valves, Screwed.....	15.00	20.00	28.00	.....	41.00	.....	54.00	66.00	100.00				
Swing Check Valves, Flanged.....	17.00	22.00	30.00	.....	44.00	.....	57.00	70.00	105.00				
End to End, Screwed.....	7¾	9	10¼	.....	12¾	.....	15	17	19½				
Face to Face, Flanged.....	9	10	11¾	.....	13¾	.....	15½	17	20				
Diameter Flanges.....	6½	7½	8¼	9	10	10½	11	12½	15				

Jenkins Bros. Globe and Angle By-Pass Valves



Fig. 1450. Standard Flanged By-Pass Angle Valve

Standard By-Pass Valves—Globe and Angle

Screwed and Flanged

For 150 Pounds Steam and 250 Pounds Working Water Pressure

Sizes up to and including 10 inches have elbows screwed into body and connected to by-pass with union nuts. Other sizes have flanges all around. By-passes may be placed on right or left hand side of valve facing outlet, as desired, but unless otherwise ordered, Globe Valves will be furnished with by-pass on right hand side, facing outlet; Angle Valves with by-pass as shown in illustration.

Standard By-Pass Valves

Size.....	4	4½	5	6	7	8	9	10	12	14	16	18	20	24
Globe and Angle, Screwed or Flanged.....	38.00	47.00	60.00	66.00	100.00	110.00	144.00	154.00	224.00	380.00	452.00	620.00	720.00	1400.00
Size of By-Pass Valve.....	1	1	1¼	1¼	1¼	1½	1½	1½	2	2	3	3	4	4
Face to Face, Screwed Globe.....	12	12⅝	13¼	16	16½	18¾	20	21½	25¾	30½	.....	.....	.....	.....
Face to Face, Flanged Globe.....	11¾	12½	13⅝	16	16¼	18½	20	21¼	24½	30	34	38	42	50
Center to Face, Screwed Outlet, Angle.....	6	6⅞	6⅝	8	8¼	9⅝	10	10¾	12⅞	15¼	.....	.....	.....	.....
Center to Face, Screwed Inlet, Angle.....	6⅞	6⅞	6⅝	8	8¼	10½	11¼	11¾	14	16¾	.....	.....	.....	.....
Center to Face, Flanged Outlet, Angle.....	5⅞	6¼	6½	8	8	9¼	10	10⅝	12¼	15	17	19	21	25
Diameter of Flanges.....	9	9¼	10	11	12½	13½	15	16	19	21	23½	25	27½	32

Made also with Extra Heavy Diameter Flanges. Detailed dimensions on application.

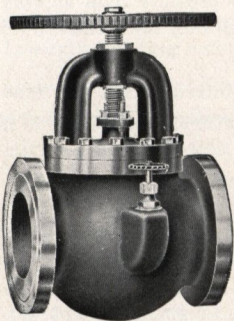


Fig. 1451. Extra Heavy Flanged By-Pass Globe Valve

Extra Heavy Globe and Angle By-Pass Valves

Globe and Angle
Screwed and Flanged

For

250 Pounds Working Steam Pressure
400 Pounds Working Water Pressure

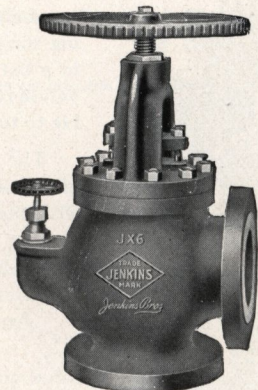


Fig. 1452. Extra Heavy Flanged By-Pass Angle Valve

Extra Heavy By-Pass Valves—Globe and Angle Pattern—Screwed and Flanged

Size.....	5	6	7	8	9	10	12
Globe and Angle, Screwed or Flanged.....	80.00	110.00	125.00	145.00	215.00	230.00	300.00
Size of By-Pass Valve.....	1	1¼	1¼	1½	1½	1½	2
Face to Face, Screwed, Globe.....	15	17	18	19½	21	23	26
Face to Face, Flanged, Globe.....	15½	17	18½	20	21¼	23	26
Center to Face, Screwed, Angle.....	7½	8½	9	9¾	10½	11½	13
Center to Face, Flanged Outlet, Angle.....	7¾	8½	9¼	10	10⅝	11½	13
Center to Face, Flanged Inlet, Angle.....	7¾	8½	9¼	10	10⅝	11½	13½
Diameter of Flanges.....	11	12½	14	15	16	17½	20½

Detailed dimensions on application.

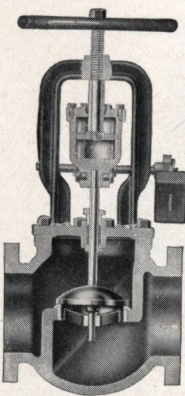


Fig. 1460. Globe Pattern Stop and Check Valve

Automatic Stop and Check Valves

This valve is designed to prevent a reverse flow of steam into a disabled boiler, and to act as an equalizing valve, to insure each unit being kept up to the average pressure in the header.

This valve will automatically cut the boiler in or out and when closed it is tight, the same as a regulation globe or gate valve.

It will be noted that the construction of this valve embodies an oil dash pot, which is rigidly connected to the stem and located outside the valve body, away from the action of the steam, and while it effectively cushions the disc, it cannot possibly be the source of any trouble.

The counter-weight lever affords means of testing the valve by hand, and also serves as an indicator, as it moves in unison with the disc.

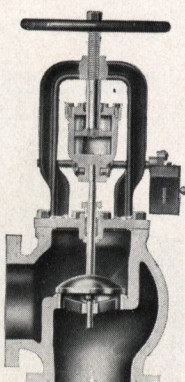


Fig. 1461. Angle Pattern Stop and Check Valve

Automatic Stop and Check Valves

Size.....	2	2½	3	3½	4	4½	5	6	7	8	10	12
Each.....	45.00	48.00	50.00	55.00	60.00	65.00	70.00	90.00	120.00	140.00	190.00	250.00
Face to Face, Globe....	9½	9½	14¾	14¾	14¾	14¾	14¾	15½	19½	19½	22½	23½
Center to Face, Angle..	4¾	4¾	7¾	7¾	7¾	7¾	7¾	7¾	9¾	9¾	11¼	11¾
Height from Center of Outlet over all.....	14½	14½	22	22	22	28	28	28	30½	38½	38½	38½
Diameter Flanges.....	6½	7½	8¼	9	10	10½	11	12½	14	15	17½	20
Approximate Wght, lbs.	110	125	225	235	250	350	370	400	500	780	1000	1250

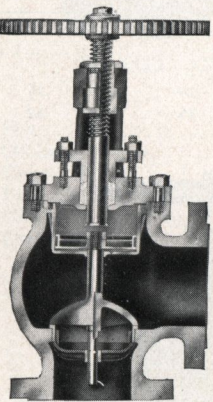


Fig. 1462. Angle Pattern, Flanged

Automatic Equalizing Stop and Check Valves

Extra Heavy, Globe and Angle—Screwed and Flanged

For 250 Pounds Working Steam Pressure

These valves are designed to automatically shut off the flow of steam from the header to a boiler in case a tube should burst or other internal rupture occur, thereby suddenly reducing the pressure in that boiler. They also equalize the pressure between the different boilers in a battery, preventing one boiler from working at a lower pressure than another. As the valves can only be opened by the pressure in the boiler to which they are attached, it is impossible to turn steam into a boiler which is being cleaned.

The valves are cushioned, to prevent chattering, by an internal dash pot, made entirely of bronze, which eliminates the danger of sticking through corrosion. Valves must be installed with the spindle in a vertical position.

Can be repacked under pressure when wide open and have renewable seat rings.

Automatic Equalizing Stop and Check Valves

Size.....	4	5	6	7	8
Globe or Angle, Screwed.....	55.00	75.00	90.00	115.00	140.00
Globe or Angle, Flanged.....	60.00	80.00	95.00	120.00	145.00
Face to Face, Globe, Screwed.....	12¾	15	17	18	19½
Face to Face, Globe, Flanged.....	13¾	15½	17	18½	20
Center to Face, Angle, Screwed.....	6¾	7½	8½	9	9¾
Center to Face, Angle, Flanged.....	6¾	7¾	8½	9¼	10
Diameter of Flanges.....	10	11	12½	14	15

Cast Steel, Extra Heavy, for 350 Pounds Working Steam Pressures and 800° F. Superheat

Equalizing Stop and Check Valves—Globe and Angle Patterns—Flanged

Size.....	4	5	6	7	8
Globe or Angle, Flanged.....	145.00	175.00	220.00	265.00	340.00

Dimensions same as listed for Extra Heavy Pattern

Automatic Return Check and Stop Valve

Patented 1916

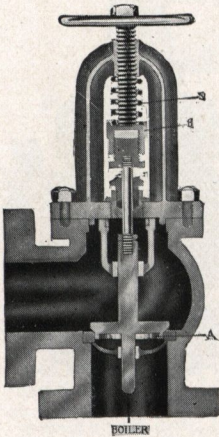


Fig. 1470

Fig. 1470 illustrates a design of Automatic Return Check and Stop Valve, the unique construction of which eliminates the objections heretofore encountered in the earlier types of valves employing dash pots in their construction.

Under high temperatures the dash pot must of necessity fit freely to minimize the possibility of sticking. If the fit is free a chattering operation is the result and with a close fit there is always danger of the piston sticking and the valve becoming inoperative.

It will be observed that the valve shown is of unbalanced piston construction, which is accomplished by passing the rod through the stuffing box, thus preventing a possible equilibrium of pressure and consequent chattering.

A novel feature presented is the adjustable auxiliary spring "S," securing a degree of adjustment for the valve, thus insuring a flow of steam from boiler to header at even pressures, or boiler pressure, at any given small excess over the header pressure. It is obvious that this construction renders it possible to check a lagging boiler with absolute certainty, and the traveling rod passing to the exterior of the valve serves the purpose of an indicator of its operation.

All stop valves are made Extra Heavy for working steam pressures to 250 pounds, and are furnished with flanges faced and drilled.

Price List—Globe or Angle

Size, inches.....	2½	3	4	5	6	8	10	12
Diameter Flanges, inches.....	7½	8¼	10	11	12½	15	17½	20½
Face to Face, Globe, inches.....	10	11¼	13½	15	17½	19	23	25
Center to Inlet, Angle, inches.....	5¼	5½	6¾	7¾	8¾	11¼	13¾	15
Center to Outlet, Angle, inches.....	5¼	5½	6¾	7¾	8¾	11¼	13¾	15
Globe or Angle, each.....	35.00	40.00	50.00	70.00	90.00	130.00	190.00	275.00

Emergency, or Triple Duty Valve

Fig. 1471 illustrates an Emergency or Triple Duty Valve which acts in the following capacities:

1. As a check against flow of steam back into a boiler from the header in the event of a ruptured tube or other part that would cause the pressure in boiler to drop below pressure in header.
2. As an automatic emergency shut-down to isolate the steam header from boiler or boilers carrying normal pressure, as in the case of a bursting main or branch which would cause a pressure drop.
3. A manually operated Stop Valve.

It will be noted that the piston "P" operating in the upper cylinder is the only part that approximates a piston fit. This is made extremely free and loose, as this design depends, under an emergency, upon the seat "S" to finally shut off the steam.

An equally important feature is that no auxiliary valves are employed, there being but one connection, "J," to the header. The valve operates on a percentage drop below normal, thus eliminating complications caused by auxiliary valve mechanism.

As in the double duty type, the position of the Emergency Valve is always plainly indicated by the valve rod "AP" protruding through the stuffing box.

All Emergency Valves are made Extra Heavy for working steam pressures to 250 pounds, and are furnished with flanges faced and drilled.

Valves for superheat quoted on application.

Price List—Globe or Angle

Size.....	2½	3	4	5	6	8	10	12
Each.....	65.00	75.00	100.00	130.00	165.00	250.00	375.00	490.00

Dimensions same as above.

Patented 1916

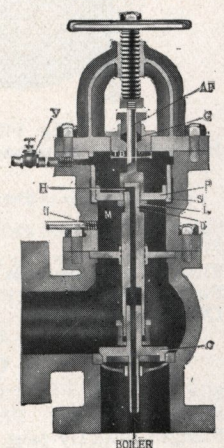


Fig. 1471

Jenkins Bros. Cast Steel Valves

Extra Heavy Globe and Angle and Check—Flanged

Suitable for 350 Pounds Working Steam
Pressure, 800° F., Superheat

Bodies and bonnets are of cast steel, and the spindles, seat rings, discs and disc rings of Monel metal.

All connecting flanges are made with $\frac{1}{16}$ -inch raised faces inside of bolt holes, and have approved high-pressure gaskets.

When valves are ordered with flanges faced and drilled, the bolt holes will always be spot-faced unless otherwise specified.

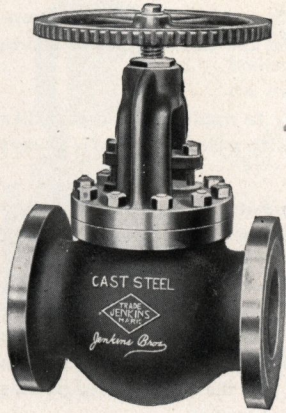


Fig. 1480
Cast Steel Globe Valve



Fig. 1481
Cast Steel Angle Valve

Cast Steel Globe, Angle and Check Valves—Flanged

Size	2	2½	3	3½	4	4½	5	6	7	8	10	12
Globe and Angle	57.50	70.00	85.00	100.00	100.00	115.00	125.00	145.00	180.00	210.00	325.00	415.00
With By-Pass									255.00	255.00	375.00	480.00
Swing Check	45.00	55.00	62.50	72.50	85.00	95.00	100.00	120.00	145.00	160.00		
Face to Face, Globe and Check	9	10	11¾	12½	13¾	14½	15½	17	18½	20	23	26
Center to Face, Angle	4½	5	5⅞	6¼	6⅞	7¼	7¾	8½	9¼	10	11½	13
Diameter of Flanges	6½	7½	8¼	9	10	10½	11	12½	14	15	17½	20½

Cast Steel Gate Valves—Extra Heavy

Suitable for 350 Pounds Working
Steam Pressure

Similar in general construction to Jenkins Bros. Extra Heavy Iron Body Gate Valves

Bodies, bonnets and wedges are made of cast steel.

Spindles, seat-rings and wedge faces are made of Monel metal.

Unless otherwise specified all flanges will have $\frac{1}{16}$ -inch raised faces.

If ordered faced and drilled, bolt holes will be spot-faced unless otherwise ordered.

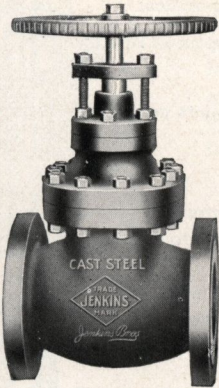


Fig. 1482
Inside Screw, Stationary Spindle, Flanged

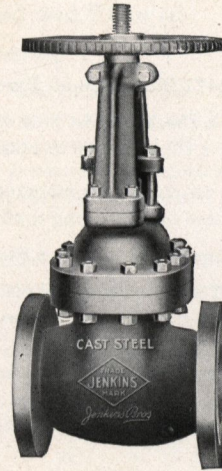


Fig. 1483
Outside Screw and Yoke, Rising Spindle

Cast Steel Gate Valves, Inside Screw, Stationary Spindle

Size	1½	2	2½	3	3½	4	4½	5	6	7	8	10	12
Flanged	40.00	41.50	52.50	64.00	78.00	90.00	105.00	115.00	130.00	155.00	185.00	280.00	340.00
Flanged, with By-pass									170.00		225.00	325.00	400.00
Face to Face	7½	8½	9½	11⅞	11⅞	12	13¼	15	15⅞	16¼	16½	18	19¾
Diameter of Flanges	6	6½	7½	8¼	9	10	10½	11	12½	14	15	17½	20½

Cast Steel Gate Valves, Outside Screw and Yoke, Rising Spindle

Size	1½	2	2½	3	3½	4	4½	5	6	7	8	10	12
Flanged	47.50	50.00	62.50	75.00	90.00	105.00	120.00	135.00	155.00	190.00	225.00	340.00	435.00
Flanged, with By-pass									205.00		275.00	400.00	515.00
Face to Face	7½	8½	9½	11⅞	11⅞	12	13¼	15	15⅞	16¼	16½	18	19¾
Diameter of Flanges	6	6½	7½	8¼	9	10	10½	11	12½	14	15	17½	20½

Jenkins Discs



Fig. 1490. Square Hole Disc



Fig. 1491. Round Hole Disc

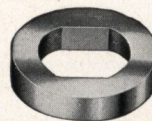


Fig. 1492. Steam Metal

Price List—Composition Discs

Size.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2
Each.....	.03	.04	.04	.05	.06	.09	.12	.18	.24	.40	.50	.60	.70
Size.....	5	6	7	8	9	10	12	14	16	18	20	22	24
Each.....	.80	1.00	1.20	1.40	1.80	2.25	2.50	3.50	4.00	5.00	6.00	7.50	9.00

Principal Compounds and Service for Which They Are Guaranteed

No. 119. Used in all Jenkins Bros. Standard Globe, Angle, Cross, Y, Safety and Radiator Valves when intended for steam service. Very hard, but becomes tough and flexible under steam pressure. Unrivalled for durability under steam pressures up to 150 pounds.

No. 100 Soft. A tough, semi-hard disc especially recommended for hot water service. Used in check valves when intended for boiler feed lines, etc.

No. 93. Rubber disc made expressly for cold water, gas or air, and is regularly supplied in Jenkins Bros. Valves intended for such service. Suitable for hydraulic pressures up to 250 pounds.

No. 94. A soft, tough, elastic disc for low pressures of water, gas or air. Suitable for use in valves or devices where a tight closure is desired with a minimum amount of pressure applied to the disc.

Steam Metal Discs for Extra Heavy Pressures

Size.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2
Each.....	.14	.14	.16	.20	.22	.28	.30	.34	.60	.85	1.35
Size.....	4	4 1/2	5	6	7	8	9	10	12	14	.....
Each.....	1.60	2.00	2.30	2.60	3.70	4.00	5.25	5.60	7.30	9.80	.....

Valve Wheels and Handles

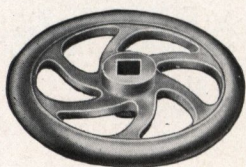


Fig. 1493. Brass Wheel

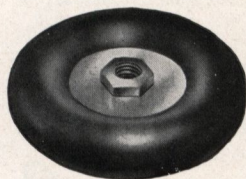


Fig. 1494. Wood Wheel

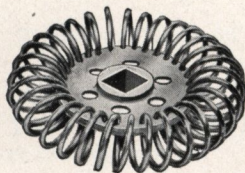


Fig. 1495. Wire Wheel



Fig. 1496. Tee Handle

Brass Wheel, Plain Finish or Nickel-plated

Size of Valve.....	1/4	3/8	1/2	3/4	1
Each.....	.30	.30	.40	.50	.70
Size of Valve.....	1 1/4	1 1/2	2	2 1/2	3
Each.....	.80	.90	1.10	2.10	2.50

Wood Wheels, Top and Bottom Plates, and Nuts

Size.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Wood Wheel.....	.05	.05	.05	.05	.06	.06	.06	.08
Top Plate.....	.04	.04	.04	.04	.05	.05	.05	.05
Bottom Plate.....	.10	.10	.10	.10	.12	.12	.13	.16
Nut.....	.03	.03	.03	.03	.03	.03	.06	.06
Complete.....	.22	.22	.22	.22	.26	.26	.30	.35

Wire Valve Wheels

Size of Valve.....	1/8	1/4	3/8	1/2	3/4	1	1 1/4
Outside Diameter of Wheel.....	1 1/2	2	2	2 1/2	2 3/4	3	3 1/4
Each.....	.12	.12	.12	.12	.14	.16	.20
Size of Valve.....	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2
Outside Diameter of Wheel.....	3 1/2	4	4 1/2	5 1/4	5 3/4	6 3/4	7 1/2
Each.....	.25	.30	.65	.90	1.10	1.30	1.50

Tee Handles, Plain Finish or Nickel-plated

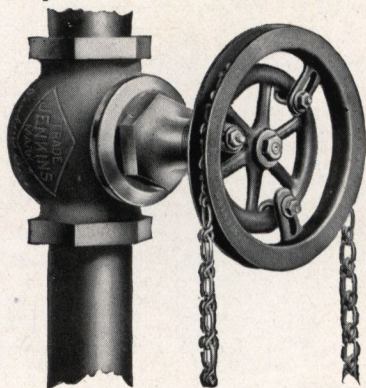
Size of Valve.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Each.....	.20	.20	.20	.20	.25	.30	.30	.40

Adjustable Sprocket Rim

Will Fit the Wheel of Any Valve

Designed for operating valves in inaccessible places. The sprocket rim is adjustable to the rim of the wheel of any valve and its application requires only the setting up of three nuts. Does away with the inconvenience of ladders and the possibility of accidents due to a fall. A practical, dependable fixture at a very small cost.

Number.....	0	1	2	3	4	5
Diameter, inches.....	4	5	9	15	22	30
Valve Sizes.....	1/4-1	3/4-2	2 1/2-4	4 1/2-9	10-16	18-26
Sprocket Rims, each.....	1.20	2.00	3.20	5.40	10.00	16.00
Chain, Bright, per foot.....	.05	.06	.06	.12	.16	.16
Chain, Rust-proof Finish, per foot.....	.08	.10	.10	.16	.24	.24

Fig. 1497
Showing Rim Applied to Wheel

Jenkins Bros. Y or Blow-Off Valves

With Renewable Seat Rings

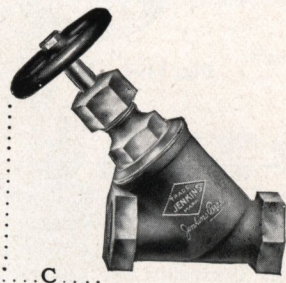


Fig. 1500. Screwed

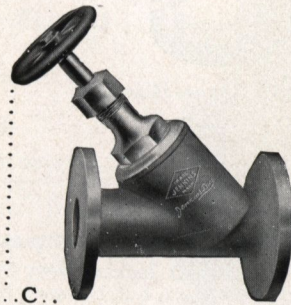


Fig. 1501. Flanged

Brass Y or Blow-off Valves, Standard—150 Pounds Steam, 250 Pounds Water Pressure

Size	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Screwed	2.00	2.00	3.00	4.00	5.00	6.50	9.25	18.00	25.00
Flanged	2.00	5.00	7.00	9.00	11.00	13.00	20.00	28.00	37.00
Length, Screwed	2 3/8	3 1/8	3 3/8	4 1/4	4 3/4	5 1/4	6 3/8	7 1/8	9 3/4
Face to Face, Flanged	4 1/4	4 3/4	5 1/4	6	6 1/2	8 1/8	9	11	11 3/4
Screwed Valve, Open—C	3	2 7/8	3 1/8	3 3/4	4 1/8	4 3/8	5 3/8	6 3/4	7 1/4
Flanged Valve, Open—C	1 1/8	2	2 1/8	2 3/4	3 1/8	3 3/8	5	6	6

Brass Blow-off Valves, Extra Heavy—250 Pounds Steam, 400 Pounds Water Pressure

Size	1 1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Screwed	4.50	6.00	8.00	10.00	13.00	19.00	36.00	46.00
Flanged	6.50	8.00	11.00	14.00	18.00	28.00	50.00	60.00
Length, Screwed	3 1/2	4 1/4	4 7/8	5 5/8	6 1/2	7 5/8	9 1/4	10 5/8
Face to Face, Flanged	4 3/8	5	5 5/8	6 3/8	7 3/8	8 3/4	10 1/2	11 3/4
Screwed Valve, Open—C	3	3 3/8	4 1/4	5 1/8	5 1/2	6 7/8	8 3/8	9 1/8
Flanged Valve, Open—C	2 1/8	2 1/2	3 1/4	3 3/8	4 3/4	5 1/2	7 1/8	7 3/4

Iron Body Y or Blow-Off Valves

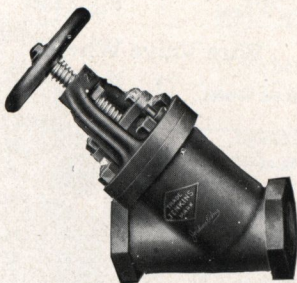


Fig. 1502. Size 2, 2 1/2, 3-inch, Screwed and Flanged

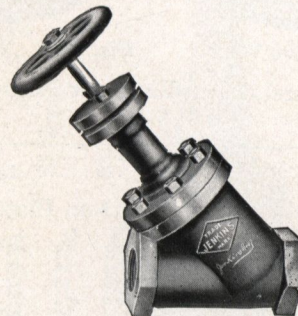


Fig. 1503. Sizes 3 1/2 to 8 inch, Screwed and Flanged

Standard Iron Body Y or Blow-off Valves—150 Pounds Steam, 250 Pounds Water Pressure

Size	2	2 1/2	3	3 1/2	4	5	6	8
Screwed	11.00	15.00	20.00	28.00	35.00	59.00	70.00	115.00
Flanged	13.00	18.00	23.00	31.00	38.00	64.00	70.00	115.00
Length, Screwed	8	9 1/2	11 1/4	13.00	13.00	15.00	16 3/4	21 1/4
Face to Face, Flanged	9 1/8	11	12 1/8	15	14 3/8	16 1/2	18 3/4	23 1/2
Screwed Valve, Open—C	6 3/8	7 1/8	6	11 7/8	10 1/2	9 3/8	13	15 1/4
Flanged Valve, Open—C	4 3/8	5 3/8	6 1/8	9 3/8	9	8 3/8	11	13

Extra Heavy Iron Body Blow-off Valves—250 Pounds Steam, 400 Pounds Water Pressure

Size	2	2 1/2	3
Screwed	16.00	20.00	26.00
Flanged	18.00	24.00	32.00
Length, Screwed	9	10 5/8	12
Face to Face, Flanged	10 3/4	12 1/2	14
Screwed Valve, Open—C	8 3/4	9 1/4	10
Flanged Valve, Open—C	6 3/8	7 1/4	8

Note: While these valves are particularly adapted for Blow-off purposes, they are also widely used where thick liquids are to be handled, for instance, in sugar refineries, pulp and paper mills, chemical and dye works, etc.

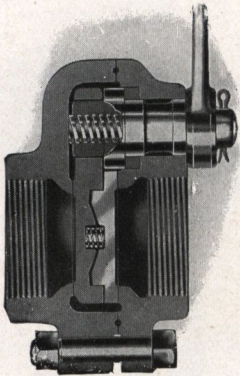


Fig. 1510
Everlasting Blow-off Valve

Blow-Off Valves
"Everlasting"

This valve is largely used in stationary service, where a strong, substantial and dependable article is necessary. The valve needs no attention after being installed, being perfectly self-grinding and self-compensating at all points.

Because of its self-cleaning, non-clogging features, and its ability to keep the seat clean and pressure tight, the valve is particularly adapted for use in paper mills, for handling pulp; breweries, rubber, soap and chemical plants, or in any service where heavy fluids are to be handled.

Everlasting Blow-off Valves

Size, inches	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
Iron Body, Screwed	9.00	11.00	11.00	16.00	22.00	25.00	32.00	44.00	60.00
Semi-Brass, Screwed	8.50	12.50	12.50	21.00	27.50	35.00	50.00	64.00	110.00
Solid Brass, Screwed	10.00	14.00	15.00	25.00	35.00	45.00	60.00	80.00	130.00
Iron Body, Flanged			15.00	19.00	26.00	30.00	39.00	50.00	70.00
Semi-Brass, Flanged		20.00	20.00	28.00	35.00	45.00	55.00	80.00	135.00
Solid Brass, Flanged		25.00	25.00	35.50	50.00	62.00	81.00	114.00	170.00

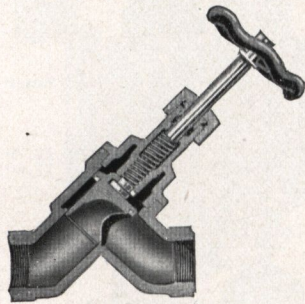


Fig. 1511
Eastwood Blow-off Valve

"Eastwood"

In this valve the disc is lengthened and an "Elbow" cored through it. This Elbow passage prevents impact of water, scale and dirt against the disc ring. It will also be observed that the lower end of disc rises above and covers the seat, thus preserving both seat and disc ring, which latter is made of soft metal, insuring tight joints. Illustration shows straightway construction, and the free and unbroken travel of the discharge.

These valves are made also in Angle pattern, and can be furnished in all sizes Screwed or Flanged.

Eastwood Blow-off Valves

Size	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	6
Iron, Bronze Mounted Screw or Flange End	4.75	6.00	10.00	14.00	20.00	28.00	38.00	.....	.....
Iron, Yoke Type, Screw or Flange End					20.00	28.00	38.00	55.00	78.00

Above prices for either Angle or Straightway.

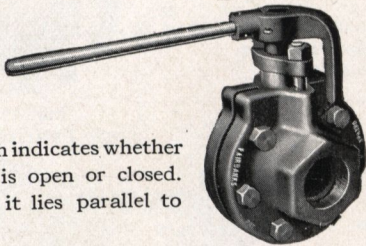
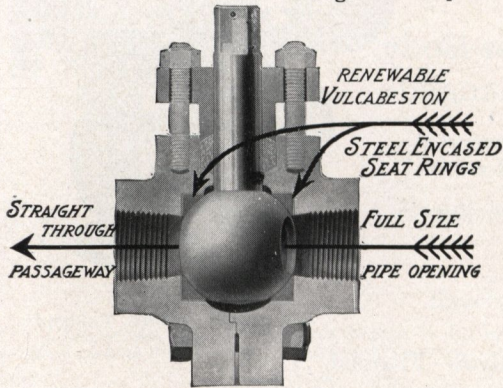


Fig. 1512. SpherO

The wrench indicates whether the SpherO is open or closed. When open, it lies parallel to the pipe.



Cross Section of SpherO
Note hole in Ball Plug through which the liquid or gas flows without friction loss

"SpherO" Blow-Off Valves

Renewable Vulcabeston Seat Rings

For 175 Pounds Steam Working Pressure

Unequalled for blow-off work, throttle service, or for use in acid works, dye works and similar plants.

The circular steel-encased seat rings, against which the ball plug revolves, are made of vulcabeston—tough, durable and wear-resisting.

These seat rings may be renewed in any shop easily and quickly, rendering the valve as good as new.

The ball plug bears only on the vulcabeston seat rings, therefore there is no tendency for the SpherO to stick. Turns easily and stays leak-proof, because the elastic vulcabeston compensates for the contraction and expansion of the ball.

Can be furnished all iron or of acid-resisting bronze, and for pressures to 250 pounds.

Size, inches	1	1 1/4	1 1/2	2	2 1/2	3
Screwed, each	8.00	10.75	13.75	19.00	25.00	35.00
Flanged, each	8.00	10.75	13.75	19.00	25.00	35.00

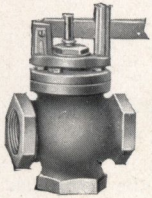


Fig. 1520

Safety Valves

Standard Iron Body Safety Valves

Screwed

Size.....	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6	8
Each.....	5.00	5.80	7.80	13.25	17.25	23.00	28.75	34.50	41.50	57.75	132.00

Flanged

Size.....	2	2 1/2	3	3 1/2	4	4 1/2	5	6	8
Each.....	10.25	16.00	21.50	27.50	34.00	40.00	48.00	65.00	140.00

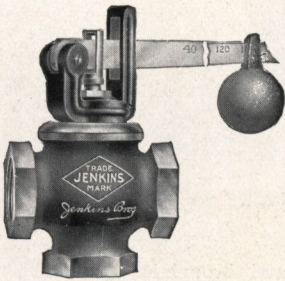
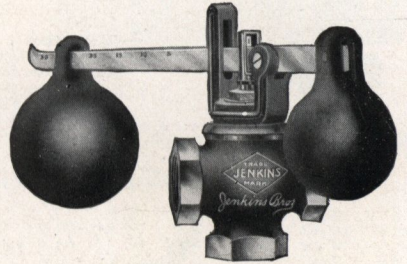
Fig. 1521
Cross PatternJenkins Bros. Brass
Safety Valves

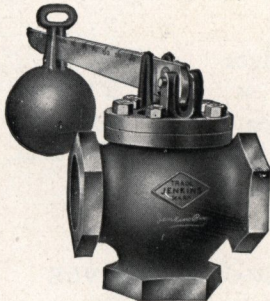
Fig. 1521. Cross and Angle patterns with levers graduated 40 to 125 Pounds.

Fig. 1522. Cross and Angle patterns with balanced weights for low pressure 5 to 30 pounds.

Fig. 1522
Cross Pattern, Low Pressure

Jenkins Bros. Brass Safety Valves

Size.....	1 1/2	3/4	1	1 1/4	1 1/2	2
Fig. 1521, Cross or Angle Pattern.....	4.00	5.00	6.00	9.00	11.00	16.00
Fig. 1522, Cross or Angle Pattern.....	4.90	6.10	7.20	10.10	12.50	17.00

Fig. 1523
Cross Pattern, ScrewedJenkins Bros. Iron Body
Safety Valves

Stock Valves have levers graduated 50 to 125 pounds

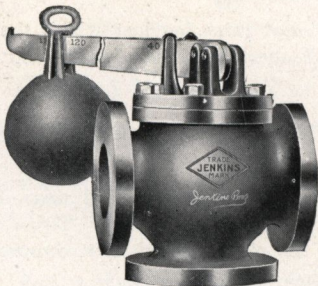
Cross Pattern furnished unless otherwise specified.

Illustrations show valves as made in sizes 2 inches and up; small sizes have brass hub screwed

Fig. 1524
Angle Pattern, Screwed

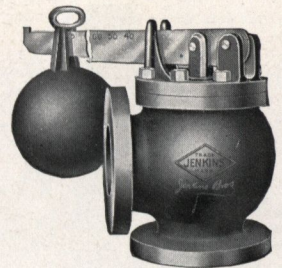
Jenkins Bros. Iron Body Safety Valves—Screwed

Size.....	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6
Cross or Angle, Screwed.....	4.50	5.00	7.00	8.00	11.00	17.00	22.00	31.00	38.00	47.00	55.00	73.00

Fig. 1525
Cross Pattern, FlangedJenkins Bros. Iron Body
Safety Valves, Flanged

Stock Valves have levers graduated 50 to 125 pounds

Cross Pattern furnished unless otherwise specified.

Fig. 1526
Angle Pattern, Flanged

Jenkins Bros. Iron Body Safety Valves—Flanged

Size.....	2	2 1/2	3	3 1/2	4	4 1/2	5	6
Cross or Angle Pattern.....	13.00	19.00	25.50	34.00	42.00	52.00	62.00	80.00
Center to Face, Flanged.....	3 3/8	4 1/2	4 5/8	5 3/8	5 7/8	6 1/4	6 1/2	8
Diameter of Flanges.....	6	7	7 1/2	8 1/2	9	9 1/4	10	11

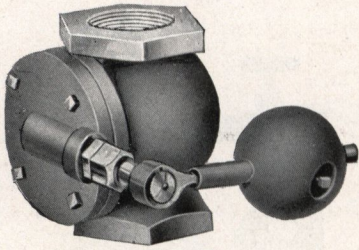


Fig. 1530. Screwed

Back Pressure Valves

Standard Iron Body
Back Pressure Valves

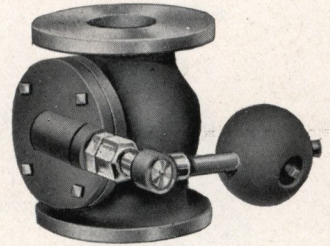


Fig. 1531. Flanged

Standard Iron Body Back Pressure Valves

Size.....	2	2½	3	3½	4	4½	5	6	7	8	10	12
Screwed.....	11.00	13.00	15.00	19.00	22.50	28.50	33.50	43.00	70.00	85.00	120.00	180.00
Flanged.....	12.75	15.00	17.50	22.00	26.00	32.00	37.00	47.00	75.00	90.00	130.00	200.00

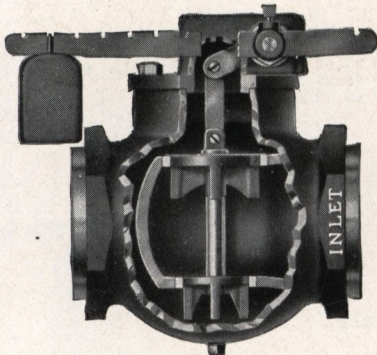


Fig. 1532. Screwed

Noiseless
Back Pressure Valves

For Non-Condensing Engines only

Suitable for Exhaust Steam
Pressures up to 15 Pounds

Can be operated in a Vertical or
Horizontal position or at
any angle

Furnished to order with Bevel
Seated Discs ground tight

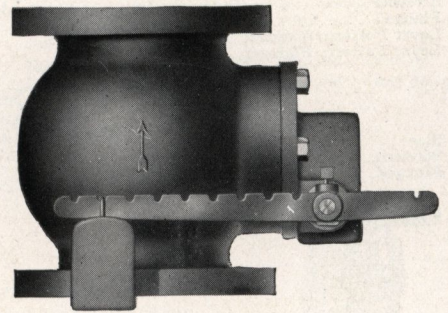


Fig. 1533. Flanged

Noiseless Back Pressure Valves

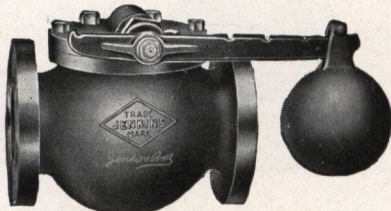
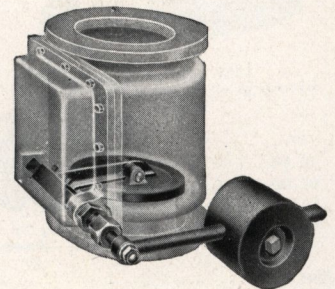
Size.....	2	2½	3	3½	4	4½	5	6	7	8	9	10	12	14	15	16
Length, Screwed.....	7½	7½	8½	9¼	10¼	11	12	13½	15	17	20	20	22¼	24	24	27½
Length, Flanged.....	8¼	8¼	8½	9	10	11	11½	13	14½	16½	19	19	22	24	24	27½
Diameter Flanges.....	6	7	7½	8½	9	9¼	10	11	12½	13½	15	16	19	21	22¼	23½
Approximate Weight, lbs..	25	30	50	60	75	90	110	160	200	275	400	450	750	875	1000	1250
Screwed or Flanged.....	14.00	16.00	18.00	22.00	25.00	30.00	40.00	60.00	80.00	100.00	120.00	145.00	220.00	345.00	400.00	465.00

Jenkins Bros.
Back Pressure Valves

Fitted with Jenkins Disc and Flat Seat.
A Durable and Practically
Noiseless Valve

Can be used in Horizontal or Vertical
position

Dimensions same as Jenkins Bros. Standard
I. B. Globe Valves

Fig. 1534
Jenkins Bros. Back Pressure ValveFig. 1535
Excelsior Back Pressure Valve

Jenkins Bros. Back Pressure Valves

Size.....	2	2½	3	3½	4	4½	5	6	8
Screwed.....	8.00	9.00	11.00	14.00	16.00	18.00	24.00	32.00	58.00
Flanged.....	9.00	10.00	13.00	16.00	18.00	22.00	26.00	34.00	58.00

Excelsior Back Pressure Valve

A Straightway Valve with an area through its seat equal to that of the pipe. Working parts can be thrown into the cover, leaving unobstructed passage through valve. Discs easily renewed. Operates in any position.

Size.....	2½	3	3½	4	4½	5	6	8	9	10	12	14	16	18	20
Length, Screwed.....	10¼	11½	12	13¼	13¼	16	19¼	19	21½	22¼	23½	28½	33	40	42
Length, Flanged.....	11	12	13	14	14½	17	19½	20½	23½	24½	25¼	31	38½	45	47½
Diameter, Flanges.....	7	7½	8½	9	9¼	10	11	12½	13½	15	16	19	21	23½	27½
Screwed, each.....	15.00	18.00	21.00	24.00	30.00	33.00	43.00	57.00	71.00	88.00	102.00	143.00	255.00	310.00	450.00
Flanged, each.....	16.00	19.00	23.00	25.00	31.00	34.50	44.50	57.00	71.00	88.00	102.00	143.00	255.00	310.00	450.00

Brass Gate Valves

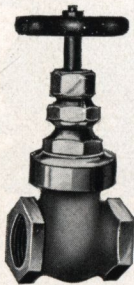


Fig. 1540. Screwed

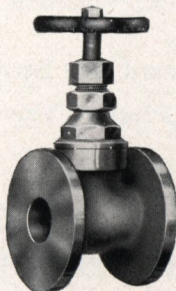


Fig. 1541. Flanged

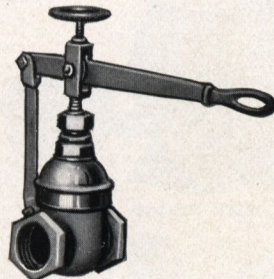


Fig. 1542. Lever

Standard Brass Gate Valves

Iron Wheel—125 Pounds Steam Pressure

Size.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
Screwed.....	1.45	1.45	1.65	2.05	2.80	3.70	5.00	7.30	13.00	19.00	43.00	58.00	110.00	165.00
Flanged.....	.....	.....	.....	9.00	10.25	12.00	15.00	25.00	33.00	39.00	68.00	83.00	135.00	190.00
Lever Pattern, Screwed.....	.....	.....	3.50	3.60	4.80	6.20	8.50	11.80	20.25	30.00	.....	.....	.....	.....
Lever Pattern, Flanged.....	.....	.....	.....	.....	12.50	14.50	18.50	29.50	40.00	50.00	.....	.....	.....	.....

Medium Heavy Brass Gate Valves

Iron Wheel—For Steam Pressures to 175 Pounds

Size.....	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Screwed.....	.....	.....	.....	.....	.....	.....	.....	.....
Flanged.....	2.75	3.25	4.50	6.00	8.00	13.00	20.00	32.50
	.....	10.25	12.50	16.25	21.50	31.00	45.00	67.50

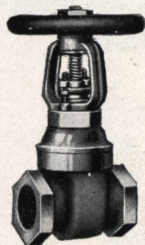


Fig. 1543

Brass Gate Valves
Outside Rising Stem and Yoke
Standard and Medium

Standard, 125 Pounds; Medium, 175 Pounds Steam Pressure

Size.....	3/4	1	1 1/4	1 1/2	2	2 1/2
Standard, Screwed.....	7.50	8.50	9.70	12.00	16.30	25.00
Medium, Screwed.....	8.75	10.25	12.00	15.00	22.00	32.00

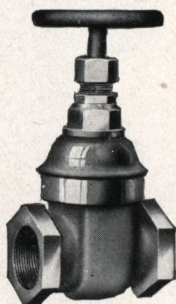


Fig. 1544. Screwed

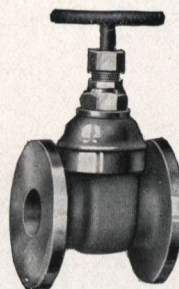
Extra Heavy Brass
Gate Valves
Iron WheelFor 250 Pounds Working Steam
Pressure

Fig. 1545. Flanged

Size.....	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Screwed.....	4.00	5.00	6.00	8.00	11.25	16.50	23.00	40.00	65.00
Flanged.....	.....	.....	13.00	16.00	21.50	30.00	41.00	65.00	100.00

Wood Wheel Gate Valves—With Union

Size.....	1/2	3/4	1	1 1/4	1 1/2	2
Rough Body, Nickel-plated Trimmings.....	3.40	4.00	4.90	6.30	8.65	12.30
Rough Body, Nickel-plated All Over.....	3.65	4.25	5.20	6.60	9.00	12.80
Finished Body, Nickel-plated Trimmings.....	4.65	5.50	6.60	8.55	11.65	17.30
Finished Body, Nickel-plated All Over.....	4.90	5.75	7.00	9.00	12.00	17.90

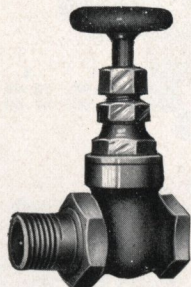
Without Union

Size.....	1/2	3/4	1	1 1/4	1 1/2	2
Rough Body, Nickel-plated Trimmings.....	2.20	2.80	3.65	4.75	6.25	9.30
Rough Body, Nickel-plated All Over.....	2.40	3.00	3.85	5.00	6.60	9.65
Finished Body, Nickel-plated Trimmings.....	3.45	4.25	5.35	7.00	9.25	14.30
Finished Body, Nickel-plated All Over.....	3.70	4.50	5.60	7.35	9.70	14.80

Extra for Lockshields

Add to Lists of Wood Wheel Valves

Size.....	1/2	3/4	1	1 1/4	1 1/2	2
Finished.....	.55	.60	.70	.85	1.00	1.45
Finished and Nickel-plated.....	.65	.70	.85	1.00	1.20	1.70

Fig. 1546
With Wood Wheel

Iron Body Gate Valves

Standard Iron Body Bronze Mounted Gate Valves

Double Disc, Parallel Seats, Inside Stationary Stem

Sizes to 8 inch, 125 Pounds Steam and 150 Pounds Water Pressure

Sizes 9 inch to 14 inch, 100 Pounds Steam

125 Pounds Water Pressure

Larger Sizes, 100 Pounds Water Pressure

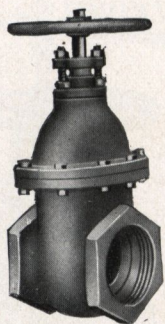


Fig. 1550. Screwed

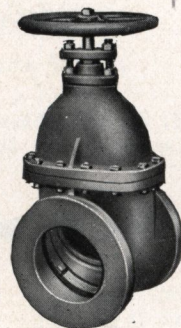


Fig. 1551. Flanged

Standard Iron Body Bronze Mounted Gate Valves

Standard Iron Body Bronze Mounted Gate Valves															
Size.....	2	2½	3	3½	4	4½	5	6	7	8	9	10	12	14	15
Screwed.....	10.00	11.50	14.00	17.00	19.00	24.00	27.50	32.50	45.00	54.00	76.00	90.00	125.00	.....	.....
Flanged.....	12.00	13.50	16.50	19.50	23.00	28.00	31.50	36.50	49.00	58.00	81.00	95.00	133.00	181.00	220.00
Size.....					16	18	20	22	24	30	36	42	48		
Flanged.....					260.00	350.00	425.00	530.00	600.00	1100.00	.....	.....	.....		
With Gear.....					360.00	460.00	550.00	675.00	750.00	1400.00	2100.00	3150.00	4300.00		
With Gear and By Pass.....					425.00	535.00	635.00	775.00	850.00	1550.00	2300.00	3400.00	4600.00		

Standard Iron Body Bronze Mounted Gate Valves

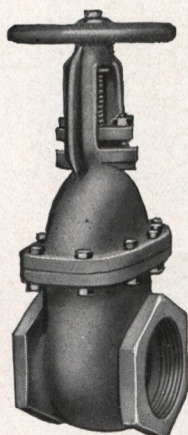


Fig. 1552. Screwed

Double Discs, Parallel Seats
Outside Rising Stem and Yoke

With Steel or Bronze Stems

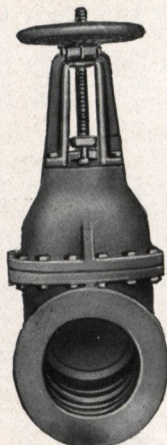


Fig. 1553. Flanged

Working Pressures for Fig. 1552-3
6-8 inches, 125 Pounds Steam,
150 Pounds Water

9-14 inches, 100 Pounds Steam
150 Pounds Water

Larger Sizes, 100 Pounds
Water Pressure

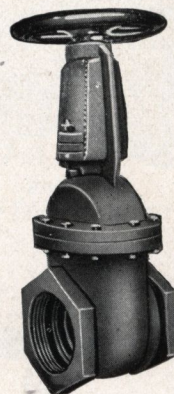


Fig. 1554
Underwriters Approved

Standard Iron Body Gate Valves—Rising Stem

Standard Iron Body Gate Valves									
Size.....	2½	3	3½	4	4½	5	6	7	
Steel Stem, Screwed.....	19.00	22.00	25.00	30.00	37.00	42.00	48.00	64.00	
Steel Stem, Flanged.....	21.00	24.50	27.50	34.00	41.00	46.00	52.00	68.00	
Bronze Stem, Screwed.....	20.50	23.50	27.00	32.50	40.00	45.00	52.00	73.00	
Bronze Stem, Flanged.....	22.50	26.00	29.50	36.50	44.00	49.00	56.00		
Size.....	8	10	12	14	16	18	20	22	24
Steel Stem, Screwed.....	80.00	122.00	160.00	.....	325.00	435.00	525.00	650.00	725.00
Steel Stem, Flanged.....	84.00	127.00	168.00	236.00	.....	.....	.....	.....	.....
Bronze Stem, Screwed.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bronze Stem, Flanged.....	90.00	136.00	180.00	255.00	350.00	470.00	565.00	700.00	775.00

"National Standard" (Underwriters Approved) Iron Body, Bronze Mounted Gate Valves

Double Discs. Parallel Seats. Outside Rising Stem and Yoke

This form of stem makes a positive indicator as to whether the valve is partly or wholly open or closed, the distance the stem projects indicating exactly the extent the valve is open.

These valves are made according to the specifications of the Associated Factory Mutual Fire Insurance Companies, the National Board of Fire Underwriters, the National Fire Protection Association and bear the letters "U. A." (Underwriters' Approved).

Fire Underwriters, the National Fire Protection Association and bear the letters "U. A." (Underwriters Approved).											
Size.....	2½	3	3½	4	5	6	7	8	10	12	14
Screwed.....	20.50	23.50	27.00	32.50	45.00	52.00	69.00	86.00	131.00	172.00	255.00
Flanged.....	22.50	26.00	29.50	36.50	49.00	56.00	73.00	90.00	136.00	180.00	255.00
Size.....						¾	1	1¼	1½		2
						8.75	10.25	12.00	15.00		22.00

Template for Drilling, Standard, page 115. Extra Heavy, page 123.

Medium Heavy Iron Body Bronze Mounted Gate Valves

For Working Steam Pressures Up to 175 Pounds

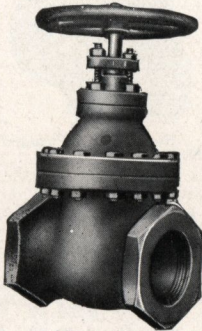


Fig. 1560
Inside Stationary Stem, Screwed

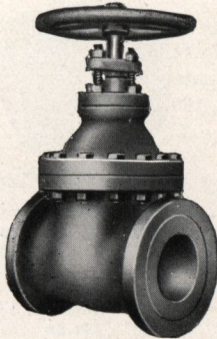


Fig. 1561
Inside Stationary Stem, Flanged

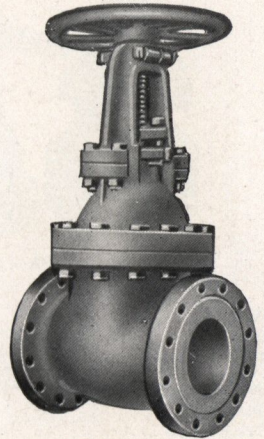


Fig. 1562
Outside Rising Stem and Yoke

Medium Heavy Iron Body Gate Valves

Size.....	2½	3	3½	4	4½	5	6	7	8	10	12
Inside Stationary Stem, Screwed.....	17.00	20.00	25.00	28.00	35.00	40.00	50.00	75.00	87.00	145.00	185.00
Inside Stationary Stem, Flanged.....	19.50	23.00	28.00	33.00	40.00	45.00	57.00	82.00	94.00	153.00	195.00
Outside Rising Stem and Yoke, Screwed.....	25.00	29.00	35.00	40.00	50.00	54.00	65.00	90.00	110.00	170.00	215.00
Outside Rising Stem and Yoke, Flanged.....	27.50	32.00	38.00	45.00	55.00	59.00	72.00	97.00	117.00	178.00	225.00
Inside Stationary Stem, Flanged, with By-Pass.....	.....	.....	.....	.....	.....	.....	85.00	110.00	125.00	185.00	230.00
Outside Stem and Yoke, Flanged, with By-Pass.....	.....	.....	.....	.....	.....	.....	100.00	125.00	148.00	210.00	260.00

Extra Heavy Iron Body Bronze Mounted Gate Valves

For Working Steam Pressures Up to 250 Pounds

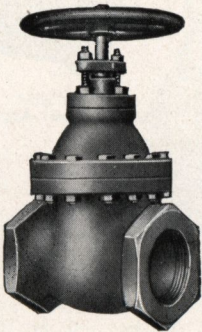


Fig. 1563
Inside Stationary Stem, Screwed

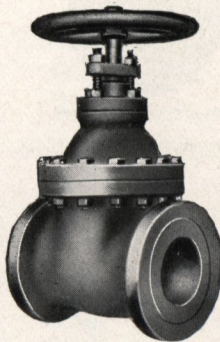


Fig. 1564
Inside Stationary Stem, Flanged

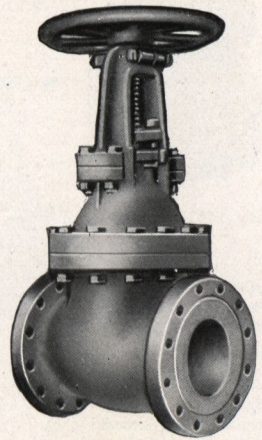


Fig. 1565
Outside Rising Stem and Yoke

Extra Heavy Iron Body Gate Valves

Size.....	2½	3	3½	4	5	6	7
Inside Stationary Stem, Screwed.....	33.00	45.00	57.00	60.00	85.00	100.00	125.00
Inside Stationary Stem, Flanged.....	35.50	48.00	60.00	65.00	90.00	107.00	132.00
Flanged, with By-Pass.....	.....	.....	.....	.....	.....	155.00	180.00
Outside Rising Stem and Yoke, Screwed.....	41.00	54.00	67.00	72.00	100.00	115.00	140.00
Outside Rising Stem and Yoke, Flanged.....	43.50	57.00	70.00	77.00	105.00	122.00	147.00
Flanged, with By-Pass.....	.....	.....	.....	.....	.....	170.00	195.00

Size.....	8	10	12	14	16	18	20
Inside Stationary Stem, Screwed.....	155.00	250.00	.....	.....	.....	.....	.....
Inside Stationary Stem, Flanged.....	162.00	258.00	335.00	440.00	675.00	.....	.....
Flanged, with By-Pass.....	215.00	310.00	400.00	510.00	750.00	.....	.....
Outside Rising Stem and Yoke, Screwed.....	180.00	275.00	.....	.....	.....	.....	.....
Outside Rising Stem and Yoke, Flanged.....	187.00	282.00	390.00	510.00	750.00	.....	.....
Flanged, with By-Pass.....	240.00	335.00	455.00	580.00	825.00	1050.00	1250.00

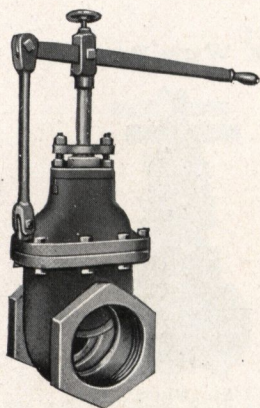


Fig. 1570

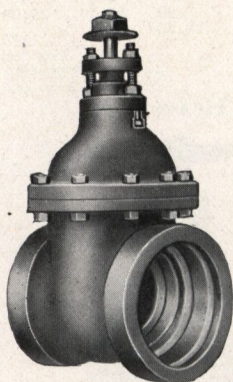
Iron Body Gate and Check Valves

Standard Iron Body, Bronze Mounted Gate Valves

Quick Opening, with Sliding Stem and Lever. To 8 inch, 150 pounds water, or 125 pounds steam pressure. Sizes 9 inch and larger, 125 pounds water, 100 pounds steam pressure. Discs can be locked in any position.

Fig. 1570

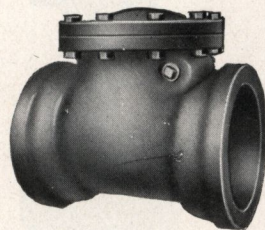
Size.....	2½	3	3½	4	4½	5
Screwed.....	19.00	22.00	25.00	30.00	37.00	42.00
Flanged.....	21.00	24.50	27.50	34.00	41.00	46.00
Size.....	6	7	8	10	12	
Screwed.....	48.00	64.00	80.00	122.00	160.00	
Flanged.....	52.00	68.00	84.00	127.00	168.00	

Fig. 1571
Hub End Gate Valve

Hub End Gate and Check Valves

Gate Valves, 8 inch and smaller, 150 pounds water pressure. Sizes, 10, 12, 14 inch, 125 pounds. Sizes, 16 inch and larger, 100 pounds.

Check Valves have leather-faced disc. For working water pressures up to 150 pounds.

Fig. 1572
Hub End Check Valve

Hub End Gate and Check Valves

Size.....	2	3	4	5	6	8	10	12	14	16	18
Gate Valves.....	10.00	14.00	19.00	27.50	32.50	54.00	90.00	125.00	173.00	250.00	340.00
Check Valves.....	.....	19.00	27.00	38.00	45.00	82.50	125.00	185.00	.....	.....	.....

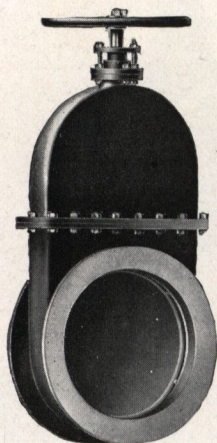
Low Pressure Gate Valves

Iron Body, Bronze Mounted and All Iron with Steel Stems

30 Pounds Test Pressure

These valves are designed for lighter pressures than the standard line, those without ribbing being tested to 30 pounds, and those for heavier service being more or less heavily and suitably ribbed for the intermediate pressures and where strains of expansion and contraction, etc., are to be provided for.

Dimensions, inches.....	14	16	18	20	24	30	36	42	48
Flanged—									
Face to Face of Flanges.....	10¾	11¾	11¾	12½	13	18½	21¾	22¾	24
Diameter of Flanges.....	21	23½	25	27½	32	38¾	46	53	59½
End to End, Bell Ends.....	13¾	15½	15½	15¾	15¾	21½	25	25	26¾
End to End of Pipe laid in bells.....	6¾	7½	7¼	7¾	7¾	11½	15	15	16¾
Diameter of Bell Sockets.....	16½	18½	20½	22¾	26¾	33	39½	46	52½
Depth of Bell Sockets.....	3½	4	4	4	4	5	5	5	5
Center of Opening to Top of Stem—									
Inside Stationary Stem.....	34½	38¾	41¾	45½	54	63	74½	87	98
Outside Rising—Open.....	62½	68	77	85½	103	126	148	172	194
Stem and Yoke—Shut.....	47½	51	58½	64	77½	94	109½	127½	144
Stationary Stem—									
Flanged.....	165.00	215.00	300.00	345.00	540.00	1025.00	1450.00	1900.00	2800.00
Flanged with Gear.....	.....	.....	.....	.....	665.00	1250.00	1750.00	2250.00	3200.00
Hub Ends.....	165.00	215.00	300.00	345.00	540.00	1025.00	1450.00	1900.00	2800.00
Hub Ends with Gear.....	.....	.....	.....	.....	665.00	1250.00	1750.00	2250.00	3200.00
Outside Rising Stem & Yoke, Flanged	200.00	255.00	340.00	395.00	610.00	1125.00	1650.00	2150.00	3100.00

Fig. 1573
Low Pressure Gate Valve, Inside Stationary Stem, Flanged

Fairbanks Gate Valves

Renewable Bronze Seat Rings—Wedge Pattern. 150 lbs. Steam and 175 lbs. Water Pressure

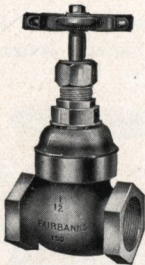


Fig. 1580. Stationary Spindle

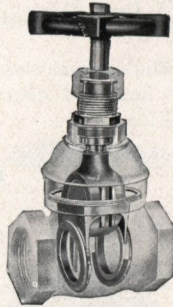


Fig. 1581. Section

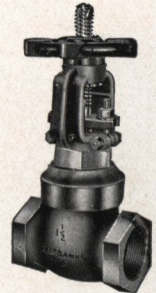


Fig. 1582. Rising Spindle

Brass Gate Valves—Screwed

Size.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Stationary Spindle, Screwed, each.....	1.65	2.20	2.80	4.00	5.30	7.80	17.00	23.00
Rising Spindle, Screwed, each.....	4.25	5.00	5.80	7.50	9.00	12.50	.....	.....

Brass Gate Valves

Non-Renewable Seats—Wedge Pattern. Standard, Heavy and Extra Heavy

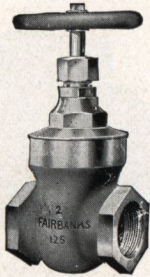


Fig. 1583. Standard

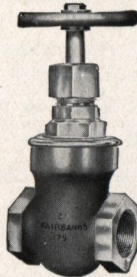


Fig. 1584. Heavy

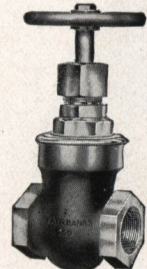


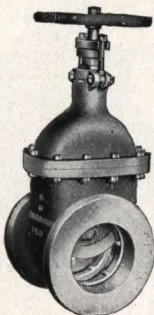
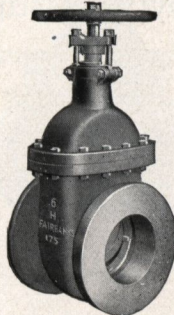
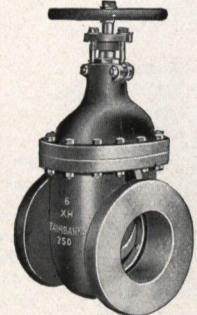
Fig. 1585. Extra Heavy

Brass Gate Valves, Standard, Heavy and Extra Heavy

Size, inches.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Standard, 125 Pounds Steam Pressure, each.....	1.45	1.45	1.65	2.05	2.80	3.70	5.00	7.30	13.00	19.00
Heavy, 175 Pounds Steam Pressure, each.....	2.35	2.35	2.75	3.25	4.50	6.00	8.00	13.00	.....	.....
Extra Heavy 250 Pounds Steam Pressure, each.....	.....	.....	5.00	6.00	8.00	11.25	16.50	23.00	.....	.....

Iron Body Gate Valves

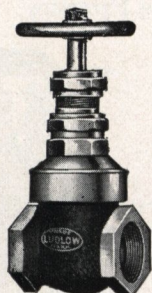
Renewable Bronze Seat Rings—Stationary or Rising Spindle. Wedge Pattern

Fig. 1586. Regular
150 Pounds Steam PressureFig. 1587. Heavy
175 Pounds Steam PressureFig. 1588. Extra Heavy
250 Pounds Steam Pressure

Iron Body, Bronze Mounted Gate Valves—Screwed and Flanged

Size, inches.....	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6	7	8	9	10	12
Fig. 1586, Stat'y Spindle, Screw End...	10.00	11.50	14.00	17.00	19.00	24.00	27.50	32.50	45.00	54.00	76.00	90.00	125.00
Fig. 1586, Stat'y Spindle, Flange End...	12.00	13.50	16.50	19.50	23.00	28.00	31.50	36.50	49.00	58.00	81.00	95.00	133.00
Fig. 1586, Rising Spindle, Screw End...	19.00	20.50	23.50	27.00	32.50	40.00	45.00	52.00	69.00	86.00	113.00	131.00	172.00
Fig. 1586, Rising Spindle, Flange End...	21.00	22.50	26.00	29.50	36.50	44.00	49.00	56.00	73.00	90.00	118.00	136.00	180.00
Fig. 1587, Stat'y Spindle, Screw End...	15.00	17.00	20.00	25.00	28.00	35.00	40.00	50.00	75.00	87.00	120.00	145.00	185.00
Fig. 1587, Stat'y Spindle, Flange End...	17.50	19.50	23.00	28.00	33.00	40.00	45.00	57.00	82.00	94.00	127.00	153.00	195.00
Fig. 1587, Rising Spindle, Screw End...	23.00	25.00	29.00	35.00	40.00	50.00	54.00	65.00	90.00	110.00	145.00	170.00	215.00
Fig. 1587, Rising Spindle, Flange End...	25.50	27.50	32.00	38.00	45.00	55.00	59.00	72.00	97.00	117.00	152.00	178.00	225.00
Fig. 1588, Stat'y Spindle, Screw End...	27.50	33.00	45.00	57.00	60.00	77.00	85.00	100.00	125.00	155.00	225.00	250.00	.....
Fig. 1588, Stat'y Spindle, Flange End...	30.00	35.50	48.00	60.00	65.00	82.00	90.00	107.00	132.00	162.00	232.00	258.00	335.00
Fig. 1588, Rising Spindle, Screw End...	35.50	41.00	54.00	67.00	72.00	92.00	100.00	115.00	140.00	180.00	250.00	275.00	.....
Fig. 1588, Rising Spindle, Flange End...	38.00	43.50	57.00	70.00	77.00	97.00	105.00	122.00	147.00	187.00	257.00	283.00	390.00

Ludlow Bronze and Iron Body Gate Valves



Screwed Bronze Valves—Double Gates

Tested at 300 Pounds

Fig. 1590. Screw Ends and Cover

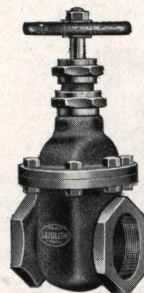
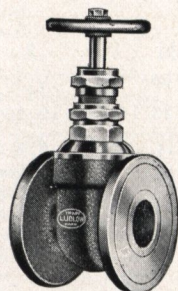


Fig. 1591. Screw Ends, Bolted Cover

Ludlow Bronze Valves—Screwed (List No. 7)

Size.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6
Screwed Ends.....	1.40	1.40	1.80	2.35	3.40	4.40	6.25	13.75	15.50	23.50	34.00	45.00	52.00	76.00
Add for S. S. and L.....	.80	.80	.80	.80	1.00	1.00	1.25	1.75	2.00	2.00	2.00	2.25	2.25	2.25
End to End.....	$2\frac{1}{8}$	$2\frac{1}{4}$	$2\frac{1}{2}$	$2\frac{7}{8}$	$3\frac{3}{8}$	$3\frac{3}{4}$	$4\frac{1}{8}$	$4\frac{1}{2}$	5	$5\frac{5}{8}$	$6\frac{1}{4}$	7	$7\frac{1}{4}$	$7\frac{1}{2}$

Ludlow Bronze Gate Valves
Flanged

Flanged Bronze Valves—Double Gate

Tested at 300 Pounds

Fig. 1592. Flanged, Screw Cover



Fig. 1593. Flanged, Bolted Cover

Ludlow Bronze Valves—Flanged (List No. 7)

Size.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6
Flanged Ends.....	3.40	3.70	4.15	5.70	7.40	11.00	18.75	21.50	30.50	43.00	55.00	64.00	88.00
Add for S. S. and L.....	.80	.80	.80	1.00	1.00	1.25	1.75	2.00	2.00	2.00	2.25	2.25	2.25
Face to Face.....	$2\frac{1}{4}$	3	3	$3\frac{3}{8}$	$3\frac{3}{8}$	$4\frac{3}{8}$	$5\frac{3}{8}$	$6\frac{1}{4}$	$6\frac{3}{4}$	$7\frac{1}{8}$	$7\frac{3}{4}$	$8\frac{1}{4}$	9
Diameter Flanges.....	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6	7	$7\frac{1}{2}$	$8\frac{1}{2}$	9	$9\frac{1}{4}$	10	11

Ludlow Iron Body Gate Valves

Screwed and Flanged

Iron Body, Bronze Mounted
Double Gates

Tested at 300 Pounds

Working Steam Pressure 75 Pounds

Working Water Pressure, 150 Pounds



Fig. 1594. Screwed

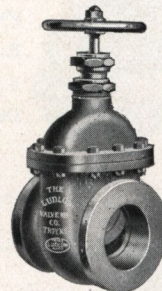


Fig. 1595. Flanged

Ludlow Iron Body Gate Valves (List No. 4)

Size.....	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6	7	8	10
Screwed.....	5.00	5.50	6.00	7.00	10.25	12.25	16.50	18.00	23.00	25.00	30.50	38.00	45.00	64.00
Flanged.....	5.50	6.00	6.25	7.50	10.75	13.25	17.50	18.50	23.50	25.50	31.00	38.00	43.50	64.50
End to End, Screwed.....	$3\frac{3}{4}$	$3\frac{3}{4}$	4	$4\frac{1}{2}$	$5\frac{3}{8}$	$5\frac{1}{2}$	$7\frac{1}{4}$	$7\frac{1}{4}$	$9\frac{1}{2}$	11	$11\frac{1}{4}$	12	$12\frac{5}{8}$	$13\frac{5}{8}$
Face to Face, Flanged.....	5	$5\frac{1}{4}$	$5\frac{1}{2}$	$5\frac{5}{8}$	$6\frac{1}{8}$	$6\frac{1}{8}$	$8\frac{1}{4}$	$8\frac{1}{4}$	$9\frac{3}{4}$	$10\frac{3}{4}$	$11\frac{3}{8}$	$11\frac{1}{4}$	11	$13\frac{3}{4}$

All Iron

Size.....	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6	8
Screwed.....	4.75	5.25	5.75	6.25	8.75	10.00	14.00	15.00	20.50	23.00	27.00	36.50
Flanged.....	5.50	6.00	6.25	7.25	9.25	11.25	15.25	16.50	21.50	23.50	28.00	36.50

Chapman Bronze Gate Valves

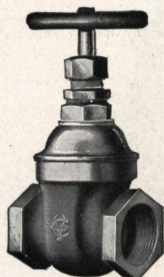
Sizes $\frac{1}{4}$ to $2\frac{1}{2}$ Inch, 175 Pounds; Sizes 3 to 4 Inch, 125 Pounds Working Pressure

Fig. 1600. Screwed

Chapman Gate Valves (List 4)

Standard Bronze Pattern

Size.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Screwed, each.....	1.35	1.35	1.50	1.85	2.55	3.30	4.50	6.70	11.35	18.00	33.50	43.50
Flanged, each.....	5.00	5.00	5.50	6.20	7.00	9.50	12.00	16.00	23.00	30.00	45.00	55.00
End to End, Screwed.....	$2\frac{1}{8}$	$2\frac{1}{8}$	$2\frac{1}{8}$	$2\frac{3}{4}$	$3\frac{3}{8}$	$3\frac{11}{16}$	$4\frac{1}{8}$	$4\frac{3}{4}$	$5\frac{1}{8}$	$6\frac{5}{8}$	$8\frac{3}{8}$	$8\frac{11}{16}$
Face to Face, Flgd..	$2\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{1}{8}$	3	$3\frac{1}{8}$	$3\frac{11}{16}$	$4\frac{1}{8}$	$5\frac{1}{4}$	$5\frac{3}{4}$	7	$8\frac{1}{4}$	$8\frac{7}{8}$
Diameter Flanges...	$2\frac{1}{2}$	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6	7	$7\frac{1}{2}$	$8\frac{1}{2}$	9

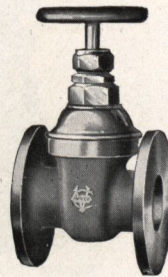


Fig. 1601. Flanged

Chapman Gate Valves (List 4)

Heavy Bronze Pattern. 175 Pounds Working Pressure

Screwed and Flanged

Size.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Screwed, each.....	3.00	3.00	3.50	4.00	5.00	6.00	7.25	9.50	17.50
Flanged, each.....	6.65	6.65	7.50	8.50	9.50	12.25	14.75	19.00	29.00
End to End, Screwed.....	$2\frac{1}{8}$	$2\frac{1}{8}$	$2\frac{9}{16}$	$2\frac{3}{4}$	$3\frac{3}{8}$	$3\frac{11}{16}$	$4\frac{1}{8}$	$4\frac{3}{4}$	$5\frac{9}{16}$
Face to Face, Flanged.....	$2\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{9}{16}$	3	$3\frac{9}{16}$	$3\frac{11}{16}$	$4\frac{5}{16}$	$5\frac{1}{4}$	$5\frac{3}{4}$
Diameter Flanges.....	$2\frac{1}{2}$	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6	7

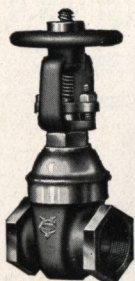


Fig. 1602. Screwed

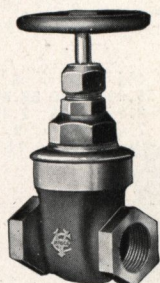
Chapman Gate Valves (List 11)

Extra Heavy Bronze Pattern. 250 Pounds Working Pressure

Stationary Spindle—Solid Bronze Seats

Screwed and Flanged

Size.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Screwed, each.....	3.50	3.50	3.85	5.20	6.35	8.00	10.30	15.20	22.75
Flanged, each.....	7.00	7.00	7.50	9.00	11.50	14.00	18.60	28.00	39.00
End to End, Screwed.....	$1\frac{7}{8}$	$1\frac{7}{8}$	$2\frac{11}{16}$	$3\frac{5}{8}$	4	$4\frac{5}{8}$	$5\frac{3}{16}$	6	$6\frac{5}{8}$
Face to Face, Flanged.....	$2\frac{3}{8}$	$2\frac{3}{8}$	$2\frac{11}{16}$	4	$4\frac{3}{4}$	$5\frac{3}{8}$	$5\frac{7}{8}$	$6\frac{3}{4}$	$7\frac{3}{4}$
Diameter Flanges.....	3	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6	$6\frac{1}{2}$	$7\frac{1}{2}$

Fig. 1603. Screwed
Stationary Spindle

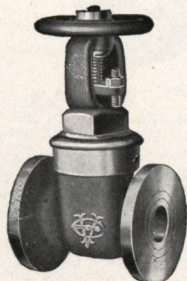
Chapman Gate Valves (List 11)

Extra Heavy Bronze Pattern. 250 Pounds Working Pressure

Rising Spindle—Solid Bronze Seats

Screwed and Flanged

Size.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Screwed, each.....	5.00	5.00	5.50	6.85	8.25	9.85	12.85	17.85	26.00
Flanged, each.....	8.50	8.50	9.00	10.75	13.35	17.00	21.50	31.00	42.50
End to End, Screwed.....	$1\frac{7}{8}$	$1\frac{7}{8}$	$2\frac{11}{16}$	$3\frac{5}{8}$	4	$4\frac{5}{8}$	$5\frac{3}{16}$	6	$6\frac{5}{8}$
Face to Face, Flanged.....	$2\frac{3}{8}$	$2\frac{3}{8}$	$2\frac{11}{16}$	4	$4\frac{3}{4}$	$5\frac{3}{8}$	$5\frac{7}{8}$	$6\frac{3}{4}$	$7\frac{3}{4}$
Diameter Flanges.....	3	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6	$6\frac{1}{2}$	$7\frac{1}{2}$

Fig. 1604. Flanged
Rising Spindle

Chapman Gate Valves

Iron Body, Bronze Mounted, for Steam and Water

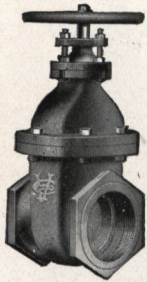


Fig. 1610
Stationary Spindle, Screwed Ends



Fig. 1611
Stationary Spindle, Flanged Ends

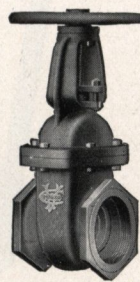


Fig. 1612
Rising Spindle, Screwed Ends

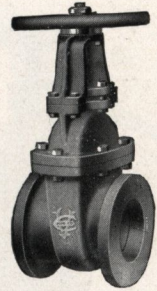


Fig. 1613
Rising Spindle, Flanged Ends

Chapman Iron Body, Bronze Mounted Gate Valves (List 24)

Sizes 2 to 16 inch, 125 Pounds; Larger Sizes, 100 Pounds Working Pressure

Size, inches.....	2	2½	3	3½	4	4½	5	6	7	8	9
Fig. 1610, each.....	10.00	11.50	14.00	17.00	19.00	24.00	27.50	32.50	45.00	54.00	76.00
Fig. 1611, each.....	12.00	13.50	16.50	19.50	23.00	28.00	31.50	36.50	49.00	58.00	81.00
Fig. 1612, each.....	19.00	20.50	23.50	27.00	32.50	40.00	45.00	52.00	69.00	86.00	113.00
Fig. 1613, each.....	21.00	22.50	26.00	29.50	36.50	44.00	49.00	56.00	73.00	90.00	118.00
End to End, Screwed, inches.....	5¾	6¾	6¾	6¾	7½	8	8½	9	9½	10	10¾
Face to Face, Flanged, inches.....	5¾	7¾	8½	8¾	9¼	9½	9¾	10½	10¾	10¾	11½
Diameter Flanges, inches.....	6	7	7½	8½	9	9¼	10	11	12½	13½	15

Size, inches.....	10	12	14	15	16	18	20	22	24
Fig. 1610, each.....	90.00	125.00	.....	.....	.....	.....	.....	.....	.....
Fig. 1611, each.....	95.00	133.00	181.00	220.00	260.00	350.00	425.00	530.00	600.00
Fig. 1612, each.....	131.00	172.00	.....	.....	.....	.....	.....	.....	.....
Fig. 1613, each.....	136.00	180.00	255.00	310.00	350.00	470.00	565.00	700.00	775.00
End to End, Screwed, inches.....	11½	12¾	.....	.....	.....	.....	.....	.....	.....
Face to Face, Flanged, inches.....	12½	12½	14	15¾	16¾	18	21	22	24
Diameter Flanges, inches.....	16	19	21	22¼	23½	25	27½	29½	32

Chapman Extra Heavy Iron Body Gate Valves

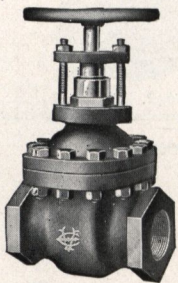


Fig. 1614
Stationary Spindle, Screwed Ends

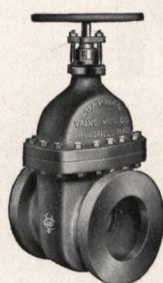


Fig. 1615
Stationary Spindle, Flanged Ends

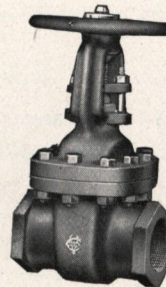


Fig. 1616
Rising Spindle, Screwed Ends

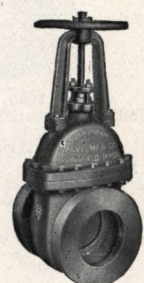


Fig. 1617
Rising Spindle, Flanged Ends

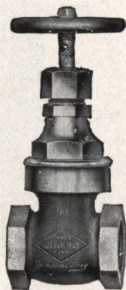
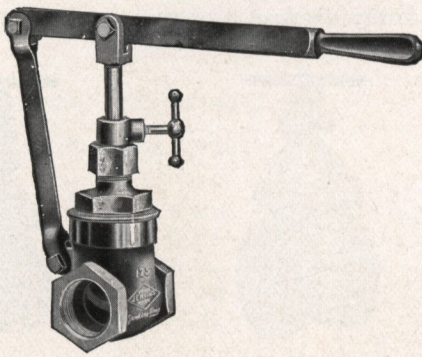
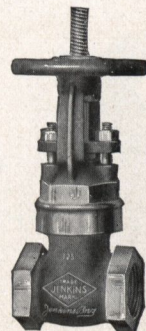
Extra Heavy Iron Body Gate Valves—250 Pounds Working Pressure (List 43)

Size, inches.....	2	2½	3	3½	4	4½	5	6	7	8
Fig. 1614, each.....	27.50	33.00	45.00	57.00	60.00	72.00	85.00	100.00	125.00	155.00
Fig. 1615, each.....	30.00	35.50	48.00	60.00	65.00	82.00	90.00	107.00	132.00	162.00
Fig. 1616, each.....	35.50	41.00	54.00	67.00	72.00	92.00	100.00	115.00	140.00	180.00
Fig. 1617, each.....	38.00	43.50	57.00	70.00	77.00	97.00	105.00	122.00	147.00	187.00
End to End, Screwed, inches.....	7	8¾	9½	9¾	10	11¾	12¼	13¾	14½	15
Face to Face, Flanged, inches.....	8½	9½	11½	11¾	12	13¼	15	15¾	16¼	16½
Diameter Flanges, inches.....	6½	7½	8¼	9	10	10½	11	12½	14	15

Size, inches.....	9	10	12	14	15	16	18	20	24
Fig. 1615, each.....	232.00	258.00	335.00	440.00	540.00	675.00	920.00	1120.00	1538.00
Fig. 1617, each.....	257.00	283.00	390.00	510.00	610.00	750.00	975.00	1156.00	1606.00
Face to Face, Flanged, inches.....	17	18	19¾	21½	21½	21½	22	23½	25¾
Diameter Flanges, inches.....	16¼	17½	20½	23	24½	25½	28	30½	36

Note: Outside Screw Valves 4½ inches and larger are listed with Steel Spindle; all other Extra Heavy Valves listed with Bronze Spindle.

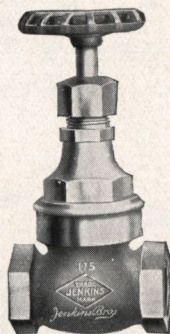
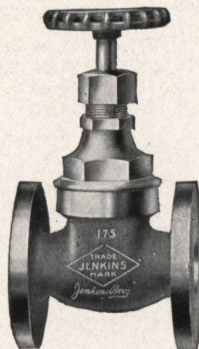
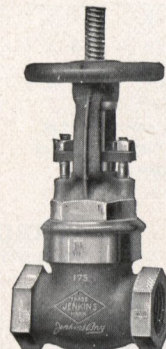
Jenkins Bros. Brass Gate Valves

Fig. 1620
Standard Pattern Stationary SpindleFig. 1621
Standard Pattern Sliding Stem and LeverFig. 1622
Standard Pattern Rising Spindle

Standard Pattern, Screwed and Flanged—125 Pounds Steam, 175 Pounds Water Pressure

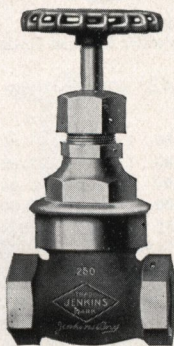
Size	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Stationary Spindle, Screwed	1.45	1.45	1.65	2.05	2.80	3.70	5.00	7.30	13.00	19.00
Stationary Spindle, Flanged				9.00	10.25	12.00	15.00	25.00	33.00	39.00
Rising Spindle, Screwed				7.50	8.50	9.70	12.00	16.30	25.00	40.50
Rising Spindle, Flanged				13.20	14.00	16.00	20.00	30.00	38.50	52.00
S. S. and L., Screwed			3.50	3.60	4.80	6.20	8.50	11.80	20.25	30.00
S. S. and L., Flanged					12.50	14.50	18.50	29.50	40.00	50.00
End to End, Screwed	1 3/4	1 3/4	1 1/2	2 1/8	2 1/4	3	3 3/8	4	4 1/8	5 3/8
Face to Face, Flanged				3 3/8	3 1/8	4 1/2	4 7/8	5 3/4	6 1/2	7 3/8

Jenkins Bros. Medium Pressure Brass Gate Valves

Fig. 1623. Screwed
Medium Pressure Stationary SpindleFig. 1624. Flanged
Medium Pressure Stationary SpindleFig. 1625. Screwed
Medium Pressure Rising Spindle

Medium Pressure Pattern, 175 Pounds Steam, 250 Pounds Water Pressure

Size	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Stationary Spindle, Screwed	2.35	2.35	2.75	3.25	4.50	6.00	8.00	13.00	20.00	32.50
Stationary Spindle, Flanged				10.25	12.50	16.25	21.50	31.00	45.00	67.50
Rising Spindle, Screwed				8.75	10.25	12.00	15.00	22.00	32.00	50.00
Rising Spindle, Flanged				16.00	18.50	22.50	29.00	40.00	58.00	86.00
End to End, Screwed	2 1/8	2 1/8	2 1/2	2 7/8	3 1/2	3 1/8	4 3/8	5 1/8	5 3/4	7
Face to Face, Flanged				3 1/8	4 1/4	4 3/4	5 1/8	6	6 1/8	8 1/8

Fig. 1626
Extra Heavy
Stationary Spindle

Jenkins Bros. Extra Heavy Brass Gate Valves

For 250 Pounds Steam, 400 Pounds Water Pressure

Screwed and Flanged—Stationary Spindle

Size	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Screwed	4.00	5.00	6.00	8.00	11.25	16.50	23.00	40.00	65.00
Flanged			13.00	16.00	21.50	30.00	41.00	65.00	100.00

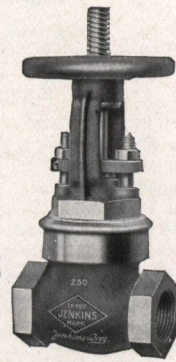
Screwed and Flanged—Rising Spindle

Size	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Screwed		11.50	13.75	17.25	23.50	32.00	52.00	74.50	
Flanged			21.00	27.00	35.50	48.00	76.00	111.00	

Dimensions—Screwed and Flanged

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
End to end, Screwed	2 1/8	3 1/8	3 3/4	4 1/4	4 3/4	5 5/8	6 3/4	7 7/8
Face to face, Flanged		4 1/8	5	5 1/2	6	7 1/8	8 1/8	9

Note: Jenkins Brothers Brass Gate Valves are of the solid wedge, double-faced type, and when wide open can be packed under full pressure. All parts are interchangeable.

Fig. 1627
Extra Heavy
Rising Spindle

Jenkins Bros. Standard Iron Body Gate Valves

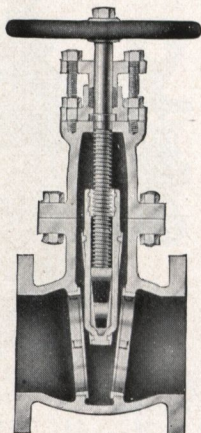


Fig. 1630. Flanged Inside Screw—Stationary Spindle

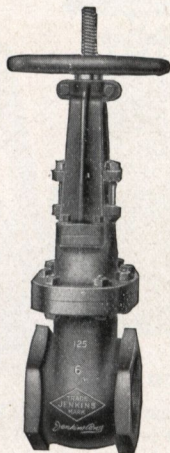


Fig. 1631. Screwed Outside Screw and Yoke—Rising Spindle

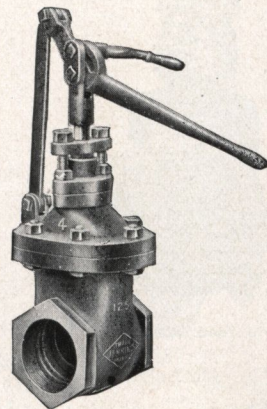


Fig. 1633. Screwed Sliding Stem and Lever—Quick Opening

Jenkins Bros. Standard Iron Body Gate Valves

Sizes 2 to 16 inch, 125 Pounds Steam, 175 Pounds Water Pressure
 Sizes 18 to 30 inch, 100 Pounds Steam, 125 Pounds Water Pressure

Inside Screw, Stationary Spindle, Screwed and Flanged

Size	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
Screwed	10.00	11.50	14.00	17.00	19.00	24.00	27.50	32.50	45.00	54.00	76.00	90.00	125.00
Flanged	12.00	13.50	16.50	19.50	23.00	28.00	31.50	36.50	49.00	58.00	81.00	95.00	133.00
Face to Face, Screwed	5½	5½	6½	6½	6½	7¼	7¾	7¾	8¼	8¾	9¼	9¾	11½
Face to Face, Flanged	7	7½	8	8½	9	9½	10	10½	11	11½	12	13	14
Diameter of Flanges	6	7	7½	8½	9	9½	10	11	12½	13½	15	16	19
Center to Wheel	10⅝	11⅞	13⅞	14½	15⅝	16½	18⅝	20	22½	25	26⅞	29⅜	33
Size	14	15	16	18	20	22	24	26	30				
Flanged	181.00	220.00	260.00	350.00	425.00	530.00	600.00	800.00	1100.00				
Face to Face, Flanged	15	15	16	17	18	19	20	23	30				
Diameter of Flanges	21	22¼	23½	25	27½	29½	32	34¼	38¾				
Center to Wheel	37½	39	40½	46½	49¾	53½	60	63½	73				

Outside Screw and Yoke, Rising Spindle—Screwed and Flanged

Size.....	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
Screwed.....	17.50	19.00	22.00	25.00	30.00	37.00	42.00	48.00	64.00	80.00	105.00	122.00	160.00
Flanged.....	19.50	21.00	24.50	27.50	34.00	41.00	46.00	52.00	68.00	84.00	110.00	127.00	168.00
Face to Face, Screwed.....	5½	5½	6½	6½	6½	7½	7½	7¾	8¼	8¾	9¼	9¾	11½
Face to Face, Flanged.....	7½	7½	8	8½	9	9½	10	10½	11	11½	12	13	14
Diameter of Flanges.....	6	7	7½	8½	9	9½	10	11	12½	13½	15	16	19
Center to Wheel.....	11¾	13	15½	16¾	18¾	20	22¾	25¼	28¼	31¾	34¾	36¾	43¾
Size.....	14	15	16	18	20	22	24	26	28				
Flanged.....	236.00	285.00	325.00	435.00	525.00	650.00	725.00	950.00	1125.00				
Face to Face, Flanged.....	15	15	16	17	18	19	20	23	26				
Diameter of Flanges.....	21	22¼	23½	25	27½	29½	32	34¼	36½				
Center to Wheel.....	51	53½	58	63½	69	75	83	90	96				

Sliding Stem and Lever—Screwed and Flanged

Size	2	2½	3	3½	4	4½	5	6
Screwed	17.50	19.00	22.00	25.00	30.00	37.00	42.00	48.00
Flanged	19.50	21.00	24.50	27.50	34.00	41.00	46.00	52.00
Size	7	8	9	10	12	14	15	16
Screwed	64.00	80.00	105.00	122.00	160.00	236.00	285.00	325.00
Flanged	68.00	84.00	110.00	127.00	168.00	236.00	285.00	325.00

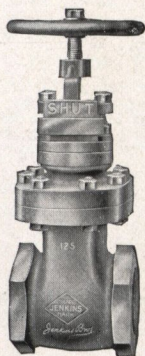
Face to Face dimensions same as above.

Standard Iron Body Indicator Valves

With "Open" and "Shut" Indicator—Screwed and Flanged

Size.....	2	2½	3	3½	4	4½	5	6
Screwed.....	17.50	19.00	22.00	25.00	30.00	37.00	42.00	48.00
Flanged.....	19.50	21.00	24.50	27.50	34.00	41.00	46.00	52.00
Size.....	7	8	9	10	12	14	15	16
Screwed.....	64.00	80.00	105.00	122.00	160.00	236.00	285.00	325.00
Flanged.....	68.00	84.00	110.00	127.00	168.00	236.00	285.00	325.00
Size.....	18	20	22	24	26	28	30	
Flanged.....	435.00	525.00	650.00	725.00	950.00	1125.00	1300.00	

Face to Face dimensions same as above

Fig. 1634
With Indicator

Jenkins Bros. Iron Body Gate Valves

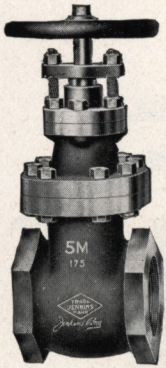


Fig. 1640. Screwed

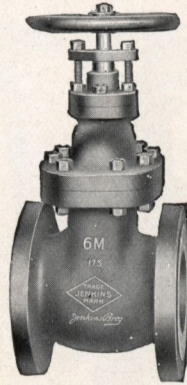


Fig. 1641. Flanged

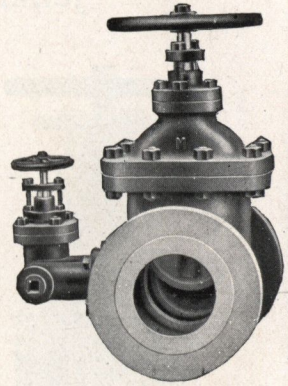


Fig. 1642. By-Pass

Jenkins Bros. Medium Pressure Gate Valves—Stationary Spindle

For 175 Pounds Working Steam Pressure, or 250 Pounds Working Water Pressure

Size.....	2	2½	3	3½	4	4½	5	6	7	8	9	10	12	14	15	16
Screwed.....	15.00	17.00	20.00	25.00	28.00	35.00	40.00	50.00	75.00	87.00	120.00	145.00	185.00	300.00	350.00	400.00
Flanged.....	17.50	19.50	23.00	28.00	33.00	40.00	45.00	57.00	82.00	94.00	127.00	153.00	195.00	300.00	350.00	400.00
Face to Face, Screwed.....	5½	6	7½	7½	7¾	8¾	8½	8¾	9¼	10	10¾	11½	12½	18	18¾	19½
Face to Face, Flanged.....	7½	8	9½	10	10½	11	11½	12	12½	13½	14	15	16	22½	23½	25
Diameter of Flanges.....	6½	7½	8¼	9	10	10½	11	12½	14	15	16	17½	20	22½	23½	25

Medium Pressure By-Pass Gate Valve

Size.....	6	7	8	9	10	12	14	15	16	18
Flanged.....	85.00	110.00	125.00	158.00	185.00	230.00	340.00	390.00	450.00	575.00

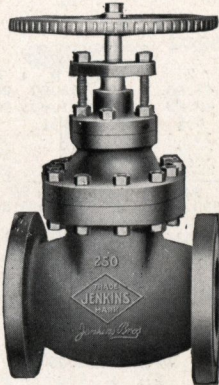


Fig. 1643. Flanged

Jenkins Bros. Iron Body
Extra Heavy Gate Valves

Iron Body, Composition Mounted
Inside Screw
Stationary Spindle

250 Pounds Working Steam Pressure
400 Pounds Working Water Pressure

Screwed, Flanged and By-Pass

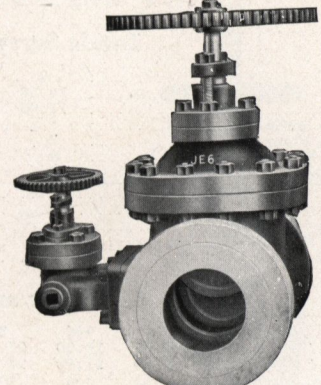


Fig. 1644. By-Pass

Jenkins Bros. Extra Heavy Gate Valves, Stationary Spindle

250 Pounds Steam Pressure, 400 Pounds Water Pressure

Size.....	1½	2	2½	3	3½	4	4½	5	6	7	8	9	10	12	14	16
Screwed.....	25.00	27.50	33.00	45.00	57.00	60.00	77.00	85.00	100.00	125.00	155.00	225.00	250.00	335.00	440.00	675.00
Flanged.....	27.50	30.00	35.50	48.00	60.00	65.00	82.00	90.00	107.00	132.00	162.00	232.00	258.00	335.00	440.00	675.00
With By-Pass.....									155.00	180.00	215.00	285.00	310.00	400.00	510.00	750.00
Face to Face, Screwed.....	6¼	7	8	9	10	11	12¼	13½	15½	16¼	16½	17	18	19¾	22½	24
Face to Face, Flanged.....	7½	8½	9½	11½	11½	12	13¼	15	15½	16¼	16½	17	18	20½	23	25½
Diameter of Flanges.....	6	6½	7½	8¼	9	10	10½	11	12½	14	15	16	17½	20½	23	25½

Medium Pressure, Outside Screw, Rising Spindle, Solid Yoke

For 175 Pounds Steam, 250 Pounds Water Pressure

Size.....	2	2½	3	3½	4	4½	5	6	7	8	9
Screwed.....	23.00	25.00	29.00	35.00	40.00	50.00	54.00	65.00	90.00	110.00	145.00
Flanged.....	25.50	27.50	32.00	38.00	45.00	55.00	59.00	72.00	97.00	117.00	152.00

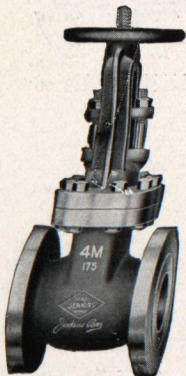
Size.....	10	12	14	15	16	18
Screwed.....	170.00	215.00				
Flanged.....	178.00	225.00	340.00	400.00	450.00	600.00

Extra Heavy O. S. and Y. Gate Valves

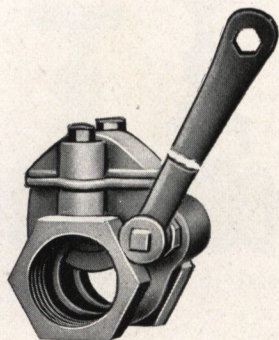
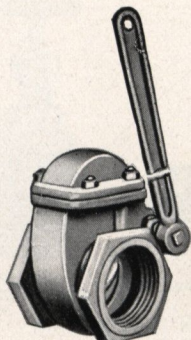
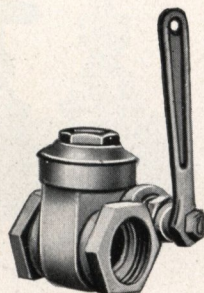
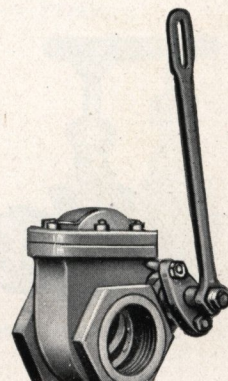
250 Pounds Steam, 400 Pounds Water Pressure

Size.....	1½	2	2½	3	3½	4	4½	5	6	7
Screwed.....	33.00	35.50	41.00	54.00	67.00	72.00	92.00	100.00	115.00	140.00
Flanged.....	35.50	38.00	43.50	57.00	70.00	77.00	97.00	105.00	122.00	147.00
Size.....				8	9	10	12	14	15	16
Screwed.....				180.00	250.00	275.00				
Flanged.....				187.00	257.00	283.00	390.00	510.00	610.00	750.00

Dimensions face to face same as listed above for Medium Pressure and Extra Heavy Patterns.

Fig. 1645
Rising Spindle

Lever Gate Valves

Fig. 1650
Brass Lever GateFig. 1651
Iron Lever GateFig. 1652
Brass Throttle GateFig. 1653
Iron Throttle Gate

Quick-Opening Lever Gate Valves

Size	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6	8
Fig. 1650, Brass	1.60	1.80	2.50	3.50	5.00	7.50	13.50	19.00	40.00	60.00				
Fig. 1650, I. B. B. M.						7.00	12.00	15.00	18.00	21.00	25.00	30.00	42.00	90.00
Fig. 1651, All Iron		4.80	5.00	5.50	6.00	7.00	12.00	15.00	18.00	21.00	25.00	30.00	42.00	90.00
Fig. 1652, Brass		3.00	4.00	5.00	7.00	10.00	19.00							
Fig. 1653, I. B. B. M.						8.50	16.00	20.00	25.00	30.00		35.00	40.00	

Prices are for Screw Ends Not made with Flange Ends.

Clip and Victor Gate Valves

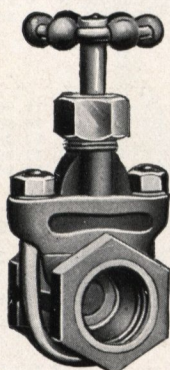


Fig. 1654. Clip Gate Valve

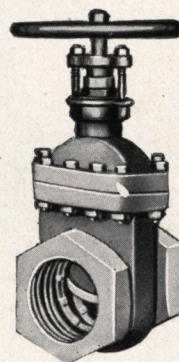


Fig. 1655. Victor Gate Valve

Clip Gate Valves, Double Seated, Screwed and Flanged

For Working Pressures to 100 Pounds

Size	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	5	6
I. B. B. M., Screwed	2.00	2.35	2.50	3.50	5.00	7.50	12.00	15.00	20.00	22.00	30.00	36.00
I. B. B. M., Flanged			3.00	4.90	6.00	8.50	13.50	16.90	22.00	25.00	34.00	40.00
All Iron, Screwed	2.00	2.35	2.50	3.50	5.00	7.50	12.00	15.00	18.00	20.00	25.00	30.00
All Iron, Flanged			3.00	4.90	6.00	8.50	13.50	16.90	20.30	22.50	28.30	33.80

Victor Gate Valves, Double Seated, Screwed and Flanged

Stationary Stem, for Working Pressures to 125 Pounds

Size	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6	7	8
I. B. B. M., Screwed	11.20	14.00	18.00	21.50	26.50	30.00	36.00	43.00	45.00	55.00
I. B. B. M., Flanged	11.20	14.00	18.00	21.50	26.50	30.00	36.00	43.00	45.00	55.00

Victor Gate Valves, Double Seated, Screwed and Flanged

Stationary Stem, Heavy Pattern, for Working Pressures to 175 Pounds

Size	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6	7	8	9
I. B. B. M., Screwed	14.00	17.50	22.50	27.00	33.00	38.00	45.00	53.00	73.00	88.00	100.00
I. B. B. M., Flanged	16.00	19.50	25.50	30.00	36.00	41.00	48.00	60.00	82.00	93.00	110.00

Radiator Valves—Steam and Water

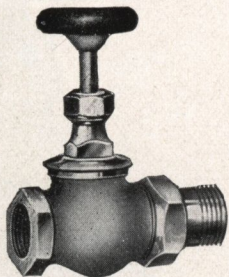


Fig. 1660. Union Globe Valve

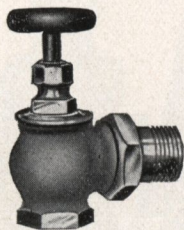


Fig. 1661. Union Angle Valve

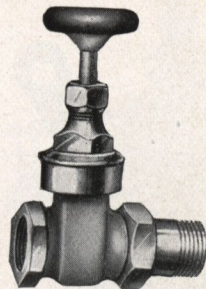


Fig. 1662. Union Gate Valve

Radiator Valves

Size	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Globe and Angle, Jenkins Disc, Wood Wheel, Rough Body, Nickel-plated, with Union	3.15	3.80	4.75	6.40	8.10	13.10
Globe and Angle, Jenkins Disc, Wood Wheel, Rough Body, Nickel-plated, without Union	2.30	2.85	3.65	4.90	6.75	11.00
Gate, Wood Wheel, Rough Body, Nickel-plated all over	3.65	4.25	5.20	6.60	9.00	12.80

Jenkins Bros. Radiator Gate Valves

Screwed Ends, Right or Left Hand Threads

Fig. 1663

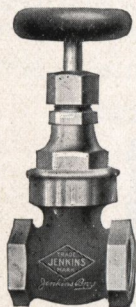


Fig. 1663. Radiator Gate Valve, Wood Wheel Screwed Ends

Size	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
No. 1, Rough Body, Finished Trimmings	2.00	2.55	3.40	4.50	6.00	8.90
No. 2, Finished All Over	3.30	4.00	5.10	6.75	9.00	13.90
No. 3, Rough Body, Nickel-plated Trimmings	2.20	2.80	3.65	4.75	6.25	9.30
No. 4, Rough Body, Nickel-plated All Over	2.40	3.00	3.85	5.00	6.60	9.65
No. 5, Finished and Nickel-plated All Over	3.70	4.50	5.60	7.35	9.70	14.80

With Male Unions, Fig. 1664

Size	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
No. 6, Rough Body, Finished Trimmings	3.20	3.75	4.65	6.00	8.25	11.90
No. 7, Finished All Over	4.45	5.25	6.35	8.25	11.25	16.90
No. 8, Rough Body, Nickel-plated Trimmings	3.40	4.00	4.90	6.30	8.65	12.30
No. 9, Rough Body, Nickel-plated All Over	3.65	4.25	5.20	6.60	9.00	12.80
No. 10, Finished and Nickel-plated All Over	4.90	5.75	7.00	9.00	12.00	17.90

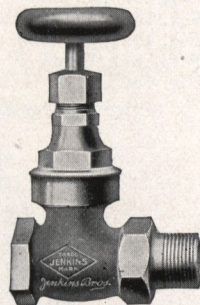


Fig. 1664. Radiator Gate Valve, Wood Wheel with Male Union

Extra for Lock Shields—Add to Lists of Wood Wheel Valves

Size	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Finished	.55	.60	.70	.85	1.00	1.45
Finished and Nickel-plated	.65	.70	.85	1.00	1.20	1.70

Quick Opening Hot Water Radiator Valves and Union Elbows

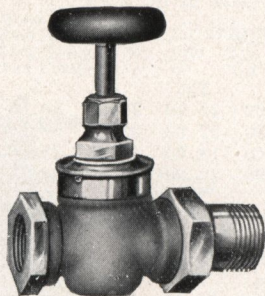


Fig. 1665. Globe Valve

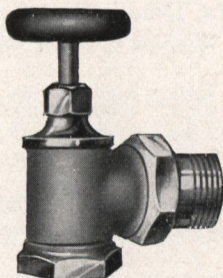


Fig. 1666. Angle Pattern

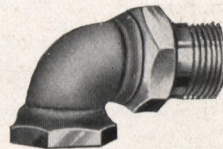


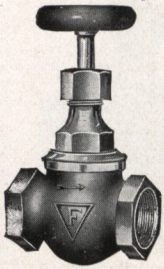
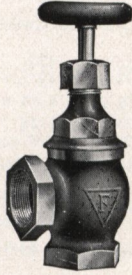
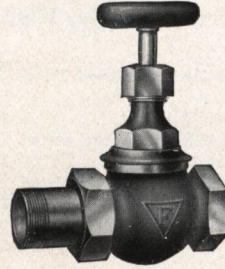
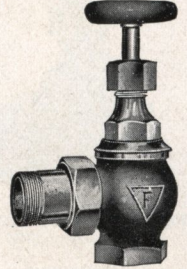
Fig. 1667. Union Elbow

Hot Water Radiator Valves and Union Elbows

Size	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Globe, Rough Body, Nickel-plated All Over	2.40	2.85	3.65	5.05	7.10	10.85
Angle, Rough Body, Nickel-plated All Over	2.40	2.85	3.65	5.05	7.10	10.85
Union Elbows, Rough Body, Nickel-plated All Over	1.75	2.00	2.50	3.20	4.00	7.00

Fairbanks Brass Radiator Valves

Renewable Vulcabeston Ring Disc, Wood Wheel—300 Pounds Hydraulic Test Pressure

Fig. 1670
Globe, ScrewedFig. 1671
Angle, ScrewedFig. 1672
Globe, with UnionFig. 1673
Angle, with Union

Fairbanks Radiator Valves

Globe Valve—Angle Valve—Screw End

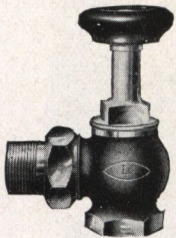
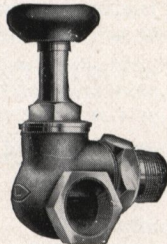
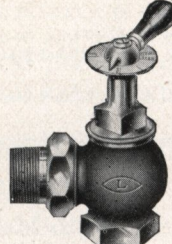
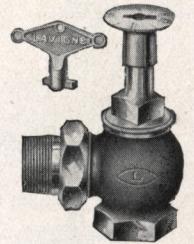
Size, inches	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Rough Body, Finished Trimmings	1.50	1.85	2.00	2.50	3.20	4.50	6.25	10.50
Rough Body, Plated Trimmings	1.80	2.15	2.30	2.80	3.50	4.80	6.55	10.80
Rough Body, Nickel-plated All Over	1.90	2.25	2.40	2.90	3.60	4.90	6.65	10.90
Finished All Over	2.00	2.25	2.50	3.00	3.75	5.25	7.25	11.75
Finished All Over and Nickel-plated	2.40	2.70	2.90	3.40	4.15	5.65	7.65	12.15

Globe Valve—Angle Valve—Male Union Outlet

Rough Body, Finished Trimmings	2.75	3.50	4.30	5.85	7.75	12.60
Rough Body, Plated Trimmings	3.05	3.80	4.60	6.15	8.05	12.90
Rough Body, Nickel-plated All Over	3.15	3.90	4.70	6.25	8.15	13.00
Finished All Over	3.20	4.00	4.80	6.40	8.75	13.85
Finished All Over and Nickel-plated	3.60	4.40	5.20	6.80	9.15	14.25

Lavigne Packless Quick-opening Steam Radiator Valves

They will not leak; require no packing. Quick-opening; standard height; well made and well finished; simple, will stand hard usage; inexpensive, on a basis of results; are shapely and well balanced.

Fig. 1674
Packless, AngleFig. 1675
Packless, Right or Left CornerFig. 1676
Graduated, PacklessFig. 1677. Lock Shield
Graduated, Packless

Packless Quick-opening Steam Radiator Valves

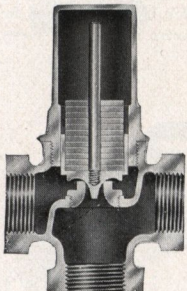
Size	1/2	3/4	1	1 1/4	1 1/2	2
No. 180, Wood Wheel, Angle	3.15	3.80	4.75	6.40	8.10	13.10
No. 181, Right Hand Corner	3.45	4.20	5.25	7.05	8.95	14.45
No. 182, Left Hand Corner	3.45	4.20	5.25	7.05	8.95	14.45
No. 280, Graduated Angle, with Shells	4.00	4.80	5.85	7.65	9.50	15.00
No. 380, Graduated Angle, without Shells	3.75	4.50	5.50	7.25	9.00	14.30
No. 281, Graduated, Right Hand Corner, with Shells	4.30	5.20	6.35	8.30	10.35	16.35
No. 381, Graduated, Right Hand Corner, without Shells	4.05	4.90	6.00	7.90	9.85	15.65
No. 282, Graduated, Left Hand Corner, with Shells	4.30	5.20	6.35	8.30	10.35	16.35
No. 382, Graduated, Left Hand Corner, without Shells	4.05	4.90	6.00	7.90	9.85	15.65

Unless otherwise specified Graduated Valves will be shipped with shells.

Note: Angle and Corner Packless Valves, in addition to the same styles in the graduated type, can be supplied with lock shields on special order at 5 per cent net advance. Nickel-plated keys for lock shield list 50 cents extra. Plain lever handle in angle or corner patterns can be furnished without extra charge, but recommended and guaranteed only for installation on top of radiator.

Special Valves for Radiators

Fig. 1678 is intended for use in the branch returns of a vacuum return line system.
Fig. 1679 is designed as a standard equipment for the return end of all radiators.

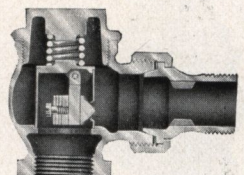
Fig. 1678
Differential Check Valve

Differential, Check Valves

Size	3/4	1	1 1/4	1 1/2	2
Capacity, square feet	400	800	1500	3000	6000
Each	10.00	15.00	20.00	25.00	40.00

Automatic Impulse Check Valves

Size	1/2	3/4	1	1 1/4
Capacity, square feet	50	200	400	750
Angle or Globe	6.60	7.80	9.40	12.50
Offset Globe	7.40	8.50	10.30	.....
Offset Corner, Right Hand or Left Hand	7.40	8.50	10.30	.....

Fig. 1679
Impulse Check Valve

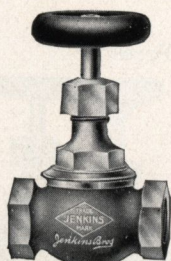


Fig. 1680 Globe, Screwed

Jenkins Bros. Radiator Valves

Screwed Ends, Right or Left Hand Threads

Size.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
No. 1, Rough Body, Finished Trimmings.....	1.50	1.85	2.00	2.50	3.20	4.50	6.25	10.50
No. 2, Finished All Over.....	2.00	2.25	2.50	3.00	3.75	5.25	7.25	11.75
No. 3, Rough Body, Nickel-plated Trimmings.....	1.80	2.15	2.30	2.80	3.50	4.80	6.55	10.80
No. 4, Rough Body, Nickel-plated All Over.....	1.90	2.25	2.40	2.90	3.60	4.90	6.65	10.90
No. 5, Finished and Nickel-plated All Over.....	2.40	2.70	2.90	3.40	4.15	5.65	7.65	12.15

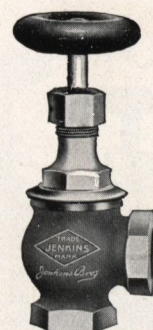


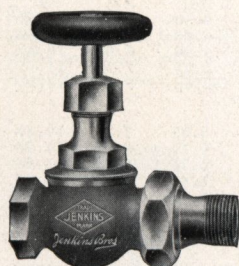
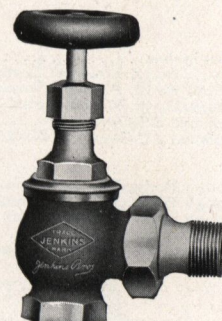
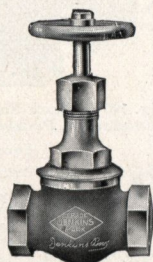
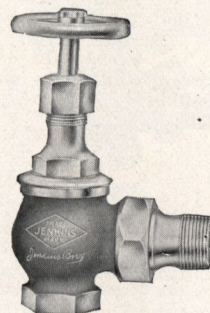
Fig. 1681. Angle, Screwed

With Male or Female Unions

Size.....	3/8	1/2	3/4	1	1 1/4	1 1/2	2
No. 6, Rough Body, Finished Trimmings.....	2.60	2.75	3.50	4.30	5.85	7.75	12.60
No. 7, Finished All Over.....	3.00	3.20	4.00	4.80	6.40	8.75	13.85
No. 8, Rough Body, Nickel-plated Trimmings.....	2.90	3.05	3.80	4.60	6.15	8.05	12.90
No. 9, Rough Body, Nickel-plated All Over.....	3.00	3.15	3.90	4.70	6.25	8.15	13.00
No. 10, Finished and Nickel-plated All Over.....	3.45	3.60	4.40	5.20	6.80	9.15	14.25

Globe or Angle, with Brass Wheels, Screwed Ends
Right or Left Hand Threads

Size.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
No. 1, Rough Body, Finished Trimmings.....	1.80	2.15	2.30	3.15	3.95	5.30	7.30	11.95
No. 2, Finished All Over.....	2.30	2.55	2.80	3.65	4.50	6.05	8.30	13.20
No. 3, Rough Body, Nickel-plated Trimmings.....	2.10	2.45	2.60	3.45	4.25	5.60	7.60	12.25
No. 4, Rough Body, Nickel-plated All Over.....	2.20	2.55	2.70	3.55	4.35	5.70	7.70	12.35
No. 5, Finished and Nickel-plated All Over.....	2.70	3.00	3.20	4.05	4.90	6.45	8.70	13.60

Fig. 1682
Globe, Male UnionFig. 1683
Angle, Male UnionFig. 1684. Globe
Fig. 1684A. Angle, ScrewedFig. 1685. Angle
Fig. 1685A
Globe, with Male Union

With Male or Female Unions

Size.....	3/8	1/2	3/4	1	1 1/4	1 1/2	2
No. 6, Rough Body, Finished Trimmings.....	2.90	3.05	4.15	5.05	6.65	8.80	14.10
No. 7, Finished All Over.....	3.30	3.50	4.65	5.60	7.40	9.80	15.30
No. 8, Rough Body, Nickel-plated Trimmings.....	3.20	3.35	4.45	5.35	6.95	9.10	14.35
No. 9, Rough Body, Nickel-plated All Over.....	3.30	3.45	4.55	5.45	7.05	9.20	14.45
No. 10, Finished and Nickel-plated All Over.....	3.75	3.90	5.05	6.00	7.55	10.20	15.70

With Lock Shields

Jenkins Bros. Radiator and Corner Valves can be furnished, when so desired, with Lock Shields in place of the regular wheels. The price is the same as for corresponding size and style of Wood Wheel Valves, with extra charge for Keys, as listed below.

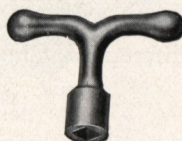
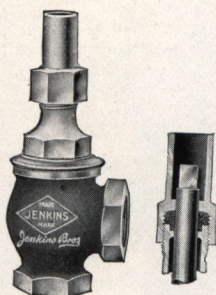
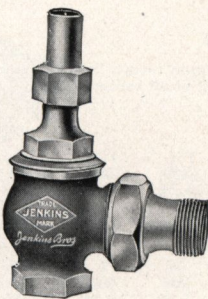


Fig. 1688. Tee Handle Key



Fig. 1689. Double Keys

Sizes.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Fig. 1688.....	.25	.25	.25	.25	.30	.30	.40	.40
Fig. 1689, Double Key.....								.32

Fig. 1686
Angle, ScrewedFig. 1687
Angle, with Union

Jenkins Bros. Radiator Valves

Offset Globe Valves

Screwed Ends, Right or Left Hand Threads—Fig. 1690

Size	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
No. 1, Rough Body, Finished Trimmings	2.25	2.75	3.50	5.00	7.00	11.55
No. 2, Finished All Over	2.75	3.25	4.25	5.75	8.00	12.95
No. 3, Rough Body, Nickel-plated Trimmings	2.55	3.05	3.80	5.30	7.30	11.85
No. 4, Rough Body, Nickel-plated All Over	2.65	3.15	3.90	5.40	7.40	11.95
No. 5, Finished and Nickel-plated All Over	3.15	3.65	4.65	6.15	8.40	13.35

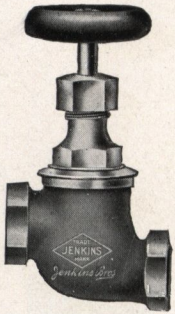


Fig. 1690. Screwed

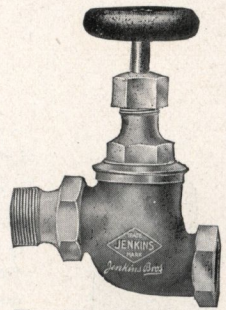


Fig. 1691. With Union

With Male or Female Unions—Fig. 1691

Size	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
No. 6, Rough Body, Finished Trimmings	3.05	3.85	4.75	6.45	8.55	13.85
No. 7, Finished All Over	3.50	4.40	5.30	7.05	9.65	15.25
No. 8, Rough Body, Nickel-plated Trimmings	3.25	4.15	5.05	6.85	8.85	14.15
No. 9, Rough Body, Nickel-plated All Over	3.45	4.25	5.15	6.95	8.95	14.25
No. 10, Finished and Nickel-plated All Over	3.90	4.80	5.70	7.45	10.05	15.65

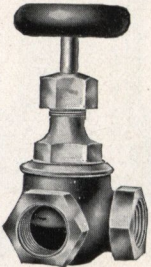


Fig. 1692. Right Hand

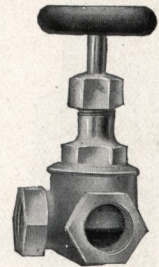


Fig. 1693. Left Hand

Corner Valves

Screwed Ends, Right or Left Hand Outlet—Fig. 1692-3

Size	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
No. 1, Rough Body, Finished Trimmings	2.25	2.75	3.50	5.00	7.00	11.55
No. 2, Finished All Over	2.75	3.25	4.25	5.75	8.00	12.95
No. 3, Rough Body, Nickel-plated Trimmings	2.55	3.05	3.80	5.30	7.30	11.85
No. 4, Rough Body, Nickel-plated All Over	2.65	3.15	3.90	5.40	7.40	11.95
No. 5, Finished and Nickel-plated All Over	3.15	3.65	4.65	6.15	8.40	13.35

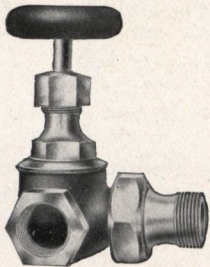


Fig. 1694. Right Hand, Male Union

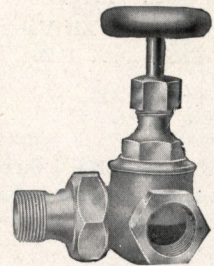


Fig. 1695. Left Hand, Male Union

With Male or Female Unions, Right or Left Hand Outlet Figs. 1694 and 1695

Size	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
No. 6, Rough Body, Finished Trimmings	3.05	3.85	4.75	6.45	8.55	13.85
No. 7, Finished All Over	3.50	4.40	5.30	7.05	9.65	15.25
No. 8, Rough Body, Nickel-plated Trimmings	3.35	4.15	5.05	6.85	8.85	14.15
No. 9, Rough Body, Nickel-plated All Over	3.45	4.25	5.15	6.95	8.95	14.25
No. 10, Finished and Nickel-plated All Over	3.90	4.80	5.70	7.45	10.05	15.65

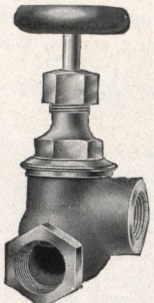


Fig. 1696. Right Hand

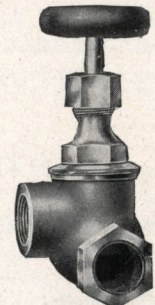


Fig. 1697. Left Hand

Screwed Ends, Right or Left Hand Outlet Offset Pattern, Figs. 1696 and 1697

Size	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
No. 1, Rough Body, Finished Trimmings	2.25	2.75	3.50	5.00	7.00	11.55
No. 2, Finished All Over	2.75	3.25	4.25	5.75	8.00	12.95
No. 3, Rough Body, Nickel-plated Trimmings	2.55	3.05	3.80	5.30	7.30	11.85
No. 4, Rough Body, Nickel-plated All Over	2.65	3.15	3.90	5.40	7.40	11.95
No. 5, Finished and Nickel-plated All Over	3.15	3.65	4.65	6.15	8.40	13.35

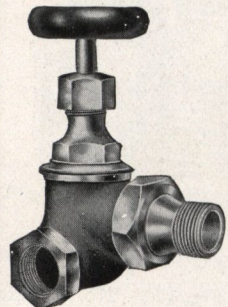


Fig. 1698. Right Hand with Male Union

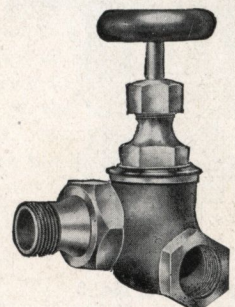


Fig. 1699. Left Hand with Male Union

With Male or Female Unions, Right or Left Hand Outlet Offset Pattern, Figs. 1698 and 1699

Size	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
No. 6, Rough Body, Finished Trimmings	3.05	3.85	4.75	6.45	8.55	13.85
No. 7, Finished All Over	3.50	4.40	5.30	7.05	9.65	15.25
No. 8, Rough Body, Nickel-plated Trimmings	3.35	4.15	5.05	6.85	8.85	14.15
No. 9, Rough Body, Nickel-plated All Over	3.45	4.25	5.15	6.95	8.95	14.25
No. 10, Finished and Nickel-plated All Over	3.90	4.80	5.70	7.45	10.05	15.65

Hoffman Air Valves

A Venting Valve for Every Service

These views show the construction of the Hoffman line of Air Valves.

The float is a sealed metal chamber having a flexible bottom. The sealed chamber or float contains a volatile or heat sensitive fluid which vaporizes at a temperature of 190 degrees F., thus generating a pressure in the chamber which deflects the flexible bottom and closes the valve port by raising the float-spindle against its seat.

Any temperature above 190 degrees instantly closes the valve, but when the temperature drops below 190 degrees the volatile fluid condenses and the valve opens, which means that the heated air which collects in the radiator is as freely vented as cold air.

Another function of the float is to take care of any sudden charge of water within the radiator. The instant water reaches the valve it closes tight against water leakage. The instant water drops away from the valve in the radiator, the siphon then automatically discharges the water into the radiator and the valve resumes venting.

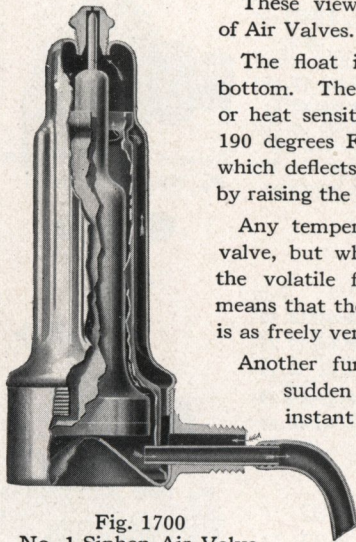


Fig. 1700
No. 1 Siphon Air Valve
Each..... 1.90

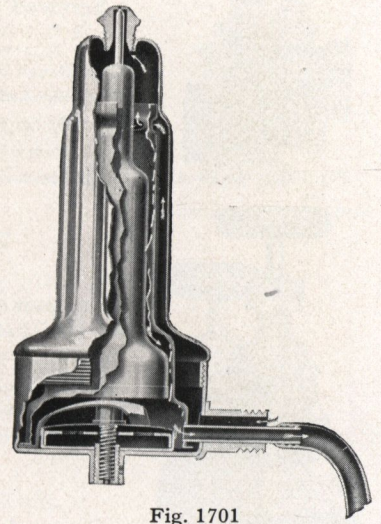


Fig. 1701
No. 2 Siphon Air and Vacuum Valve
Each..... 4.50

No. 1 Siphon Air Valve

Fig. 1700, No. 1 Siphon Air Valve, while classed as simply an automatic Air Valve is in reality a perfect instrument for venting a steam radiator. It distinguishes between steam, water and air, passing the latter freely, but stopping positively steam or water leakage.

No. 2 Siphon Air and Vacuum Valve

Fig. 1701, No. 2 Siphon Air and Vacuum Valve is another perfect instrument. It functions the same as No. 1, and in addition automatically prevents air from returning to the radiator through valve after steam pressure ceases, thereby inducing a vacuum, making a vacuum system out of an ordinary one-pipe heating system.

Hoffman "Air Line" and Quick Vent Air Valves

The Hoffman Air Line Valve, Fig. 1702, is an automatic and non-adjustable air valve. Sectional cut shows construction. The expansible medium is a volatile or heat sensitive fluid, which is contained in a sealed metal chamber having a flexible bottom, as above described. It will be noted that this sealed metal chamber rests on a rivet-headed valve pin, which in turn is supported by a flat phosphor bronze spring. The tension of this spring is just sufficient to hold the rivet-headed valve open and in close but free contact with the flexible bottom of the sealed metal chamber. It also holds the chamber itself against the top of the housing. The valve port is therefore always open when the valve is cold for the free passage of air, but closes instantly when steam reaches it. Adapted for drip or vacuum air line service.

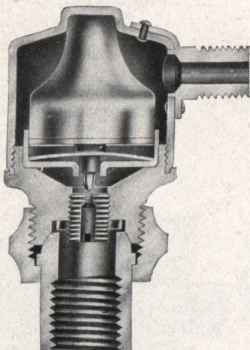


Fig. 1702, No. 3
Air Line Valve
Each..... 2.50

Fig. 1703, Junior Quick Vent Air Valve is a straight shank thermostatic non-adjustable air valve for venting mains, large coils, Vento Stacks, etc. Vent port is $\frac{1}{16}$ inch and is instantly closed when steam reaches the valve. As in other types of these valves, air is discharged rapidly; but the No. 4 Junior does not close against water—being designed for quick vent service where water is not a factor.

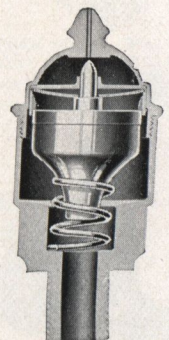


Fig. 1703, No. 4 Junior
Quick Vent Air Valve
Each..... 2.80

Hoffman Air Valves—Continued

A Venting Valve for Every Service

Fig. 1710 represents the Hoffman Quick-vent Float Air Valve, which is automatic and non-adjustable, designed for quick-vent service where it is desired to control or prevent the emission of either steam or water through the valve.

Intended for service at the end of heating mains which are so close to the water line that water may come against the valve.

Also specially designed for quick-venting of Blast or "Vento" coils or stacks, or for any quick-vent service where water is liable to come against the valve, and where it is desired to check the passage of water through the valve.

As shown in cut, the float performs a double function. When the water comes to the valve the float instantly rises and closes the valve port against any possible leakage of water. When steam is against the valve, the volatile fluid in the float closes it, but reacts the instant steam ceases, leaving the valve open for the free emission of any air that may be against it.

In ordering No. 5, pressure conditions must be stated, as for pressures 3 to 10 pounds the vent port is $\frac{1}{16}$ inch, and for pressures less than 3 pounds the vent port is $\frac{3}{16}$ inch.

Fig. 1711, No. 6 is similar to No. 5, with the addition of the vacuum feature, which prevents the air returning through the valve when steam pressure ceases.

This valve is especially adapted for Vapor Vacuum Heating systems, and its adoption for this service insures maximum results.

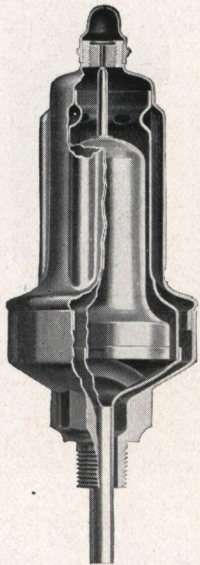


Fig. 1710
No. 5 Quick-vent
Float Air Valve
Each..... 8.00

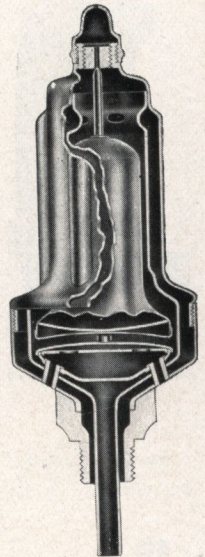


Fig. 1711
No. 6 Quick-vent
Float Air and Vac-
uum Valve
Each..... 12.00

Hoffman Return Line Valve

No. 8

Automatic, Non-Adjustable, Thermostatic

For Vapor, Vapor Vacuum, Modulating and Vacuum Heating Systems

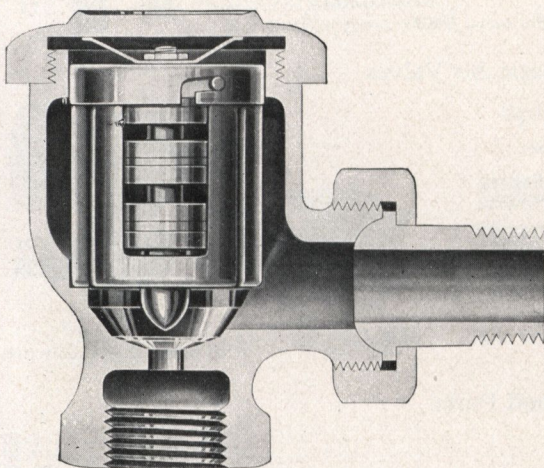


Fig. 1712. No. 8 Return Line Valve

The first, last, and only function of a Return Line Valve is to positively and quickly distinguish between steam, air and water, but stopping steam. This is all that a Return Line Valve is designed to do, and the Hoffman No. 8 does it perfectly. It instantly opens when air or water comes to it, but closes tight against steam. It performs all of its functions noiselessly. It is automatic and non-adjustable. The thermostatic parts are not attached to the valve body, are interchangeable and may be shifted from one valve body to another without affecting the proper operation of the Valve. It is all brass, nickel-plated with polished trimmings. It is designed for low pressure and vacuum service, but is not harmed in the least if pressures of 100 pounds should come against it. No. 8 is not only the latest Return Line Valve on the market, but is without question the very last word in such valves.

No. 8 Angle, size $\frac{1}{2}$ inch, maximum capacity, 200 square feet, list price.....	6.00
No. 8 Straightway or offset, size $\frac{1}{2}$ inch, maximum capacity, 200 square feet, list price.....	7.00
No. 8 Corner—right hand or left hand, size $\frac{1}{2}$ inch, maximum capacity, 200 square feet, list price.....	7.00
No. 9 Angle, size $\frac{3}{4}$ inch, maximum capacity, 600 square feet, list price.....	8.00

Radiator Air Valves



Fig. 1720
Namanco Angle
Each..... 1.00



Fig. 1721
Namanco Straight
Each..... 1.00



Fig. 1722
Standard Angle
Each, $\frac{1}{8}$ in. 1.00
Each, $\frac{1}{4}$ in. 1.50



Fig. 1723
Standard Straight
Each, $\frac{1}{8}$ in. 1.00
Each, $\frac{1}{4}$ in. 1.50

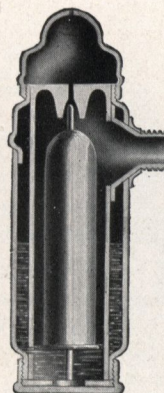


Fig. 1724
Norwall
Each..... 1.30

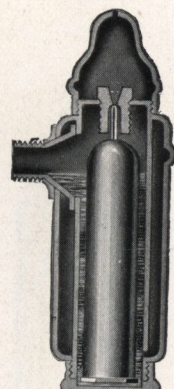


Fig. 1725
Allen
Each..... 1.00

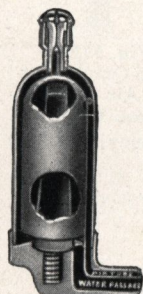


Fig. 1726
Perfected Duplex
No. 1
Each..... 1.50



Fig. 1728
No. 6 Four-way Drain
Angle or Straight
Each..... 3.00

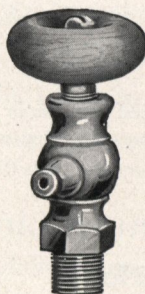


Fig. 1729
Wood Wheel Air Valve
Nickel-plated
Each..... 1.00

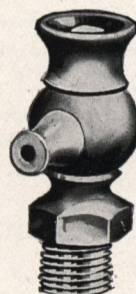


Fig. 1729A
Key Air Valve
Nickel-plated
Each..... .70

Four Keys furnished
with each dozen. Addi-
tional keys extra.

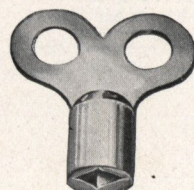


Fig. 1729B
Key
Each..... .12

Jenkins Improved Automatic Air Valves

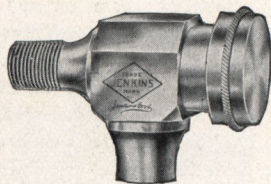
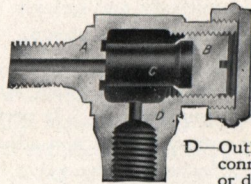


Fig. 1729C. Jenkins Air Valve
Sizes $\frac{1}{8}$, $\frac{1}{4}$ and $\frac{3}{8}$ inch



Section

A—Inlet.
B—Adjusting
screw.
C—Expansible
plug.
D—Outlet, tapped to
connect drip cup
or drip pipe.



Fig. 1729D
Drip Cup

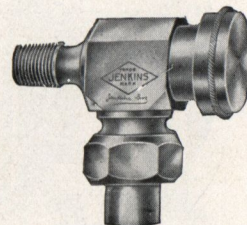


Fig. 1729E
With Union Drip Connection

Jenkins Air Valves and Parts

Fig. 1729C, size $\frac{1}{8}$ inch, Finished and Nickel-plated, per dozen.....	7.50
Fig. 1729C, size $\frac{1}{4}$ inch, Finished and Nickel-plated, per dozen.....	7.50
Fig. 1729C, size $\frac{3}{8}$ inch, Finished only, per dozen.....	30.00
Fig. 1729D, Drip Cups, Finished and Nickel-plated, per dozen.....	2.00
Fig. 1729E, size $\frac{1}{8}$ Inlet, $\frac{1}{4}$ Union, Finished and Nickel-plated, per dozen.....	9.50
Fig. 1729E, size $\frac{1}{8}$ Inlet, $\frac{1}{4}$ Union, Finished and Nickel-plated, per dozen.....	10.00
Fig. 1729E, size $\frac{1}{4}$ Inlet, $\frac{1}{4}$ Union, Finished and Nickel-plated, per dozen.....	10.00
Plug and Screw B and C for sizes except $\frac{3}{8}$ inch, each.....	.25
Plug and Screw B and C for $\frac{3}{8}$ inch Air Valve, each.....	.50

Fig 1729C in the $\frac{3}{8}$ inch size is designed for conditions requiring the quick removal of air from long runs on ends of mains, large stacks of indirect radiation, etc. Its capacity is about nine times that of the regular $\frac{1}{8}$ inch Air Valve.

These valves can be renewed by simply replacing parts B and C.

Penberthy Leakless Priming Cups

These combined Priming Cups and Relief Cocks are constructed on the needle valve principle. A partial turn of the Hexagon or Wing Bowl will open, and in closing you have the leverage attainable from a fine thread, and a needle point stem on a tapered seat (see sectional cut). This means to the user no lost compression and no sticking and consequently no broken lever handles.

No taper ground joints to be waxed and ultimately leak.

The upper part (combining bowl and stem) will not loosen from vibration, which fact has been thoroughly proven through several years' use and the fact that some of the most critical automobile engineers in the country have adopted this Primer as standard equipment.

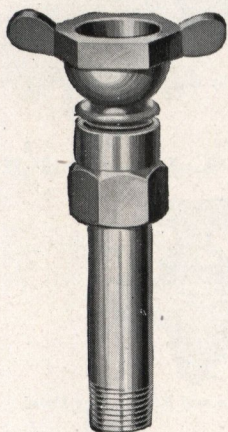


Fig. 1730
Wing Pattern, Long Shank
7/8 inch under Hexagon

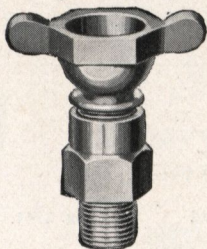
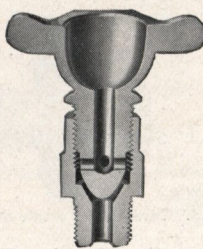


Fig. 1731
Wing Pattern, Short Shank



Wing Pattern
Sectional View



Fig. 1732
Hexagon Pattern
Short Shank

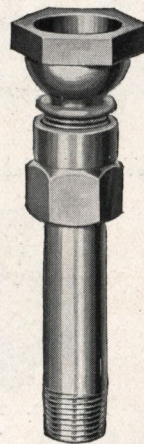


Fig. 1733
Hexagon Pattern
Long Shank
7/8 inch under Hexagon

Wing Type

Size of Shanks, inch.	1/8	1/4
Short Shank, Brass, each	.85	1.05
Short Shank, Nickel-plated, each	.95	1.20
Long Shank, Brass, each	1.10	1.30
Long Shank, Nickel-plated, each	1.25	1.50

Hexagon Type

Size of Shanks, inch.	1/8	1/4
Short Shank, Brass, each	.80	1.00
Short Shank, Nickel-plated, each	.90	1.15
Long Shank, Brass, each	1.00	1.20
Long Shank, Nickel-plated, each	1.15	1.40

Combined Priming Cups and Relief Cocks

For Gasoline Engines

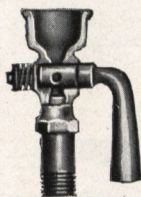


Fig. 1734
Lever Handle

Number	00	0	1	2	3	4
Pipe Size	1/8	1/8	1/8	1/4	1/4	3/8
Lever Handle	.75	.85	.95	1.10	1.40	1.65
Elbow Shank, Right or Left	.85	1.00	1.15	1.35	1.60	1.90
Tee Handle (Not Illustrated)	.70	.80	.90	1.00	1.30	1.50
With Forked Handle (Not Illustrated)	.95	1.15	1.30	1.50	1.75	2.00
Short Shank with Lever (Not Illustrated)	.80	.95	1.05	1.25	1.50	1.75
Diameter of Bowl	1 1/8	1 1/8	1	1	1 1/8	1 1/4

In Fig. 1735, Elbow Shank, unless otherwise ordered, Right Hand Pattern will be sent.

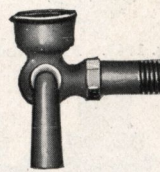


Fig. 1735
Elbow Shank, Lever Handle
Right Hand Pattern

Spring Key Cocks

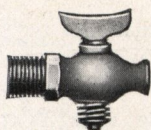


Fig. 1736
Tee Handle
Male End

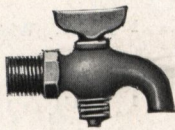


Fig. 1737
Bibb Nose, Male End

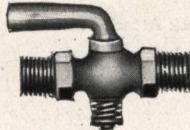


Fig. 1738
Male Ends, Lever Handle

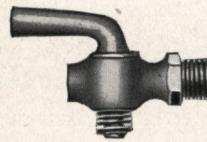


Fig. 1739
Drain Cock for Crank Case

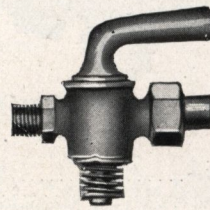


Fig. 1739A
Gasoline Cock
With Brazing Union

Spring Key Cocks

Size	1/8	1/4	3/8	1/2
Tee Handle, Male End	.65	.75	1.00	1.30
Tee Handle, Bibb Nose	.85	.90	1.30	1.65
Lever Handle, Double Male End	.85	1.10	1.50	2.00
Drain Cock, Lever Handle	1.25	1.30	1.50	2.10
Gasoline Cock with 1/4-inch Brazing Union	1.35	1.45	1.50	1.50
Gasoline Cock, with 1/8-inch Brazing Union	1.40	1.50	1.50	1.50
Gasoline Cock, with 3/8-inch Brazing Union	1.70	1.90	1.50	1.50
Gasoline Cock, Male Thread both Ends (Not Illustrated)	1.15	1.30	1.50	1.50
Gasoline Cock, Female Ends (Not Illustrated)	1.15	1.30	1.50	1.50
Gasoline Cock, Male and Female Ends (Not Illustrated)	1.15	1.30	1.50	1.50
Gasoline Cock, Male Threaded One End (Not Illustrated)	1.15	1.30	1.50	1.50

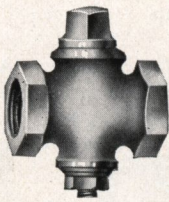


Fig. 1740. Square Head

Brass and Acid Metal Cocks

Gas Service Cocks

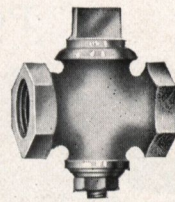


Fig. 1741. Flat Head

Gas Service Cocks

Size.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Square and Flat Head.....	.90	1.00	1.10	1.30	2.10	3.25	4.60	8.00	17.50	27.00

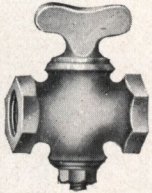


Fig. 1742. Tee Head

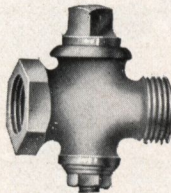


Fig. 1743. Male and Female Square Head

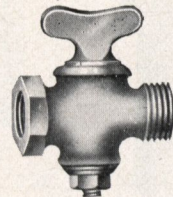


Fig. 1744. Male and Female Tee Head

Gas Service Cocks

Size.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Tee Head.....	1.00	1.15	1.30	1.55	2.40	3.70	5.45	9.15
Male and Female.....	....	1.20	1.30	1.55	2.40	3.65	5.45	9.15

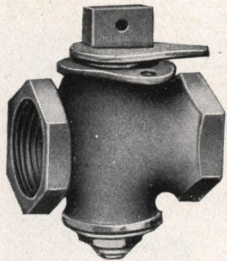


Fig. 1745. Flat Head

Lock Gas Service Cocks

Size.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Flat Head.....	1.30	1.60	2.10	3.50	5.00	7.00
Round Way.....	....	2.00	....	....	....	....

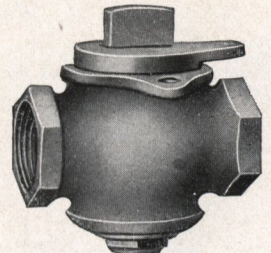


Fig. 1746. Round Way

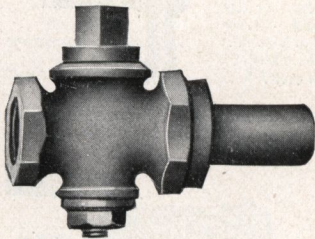


Fig. 1747. Union Meter Cock

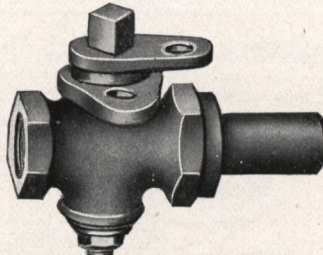


Fig. 1748. With Lock Attachment

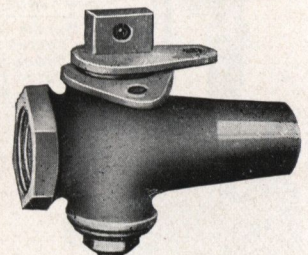


Fig. 1749. With Lock Attachment

Gas Service Cocks

Size.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Union Meter Cock.....	1.55	1.70	2.05	3.10	4.65	6.70	10.90	13.25	19.95
Fig. 1748, Lock Attachment.....	1.85	2.00	2.35	3.50	5.25	7.45	11.90	....	....
Fig. 1749, Lock Attachment.....	....	....	1.40	....	....	....	....	....	....

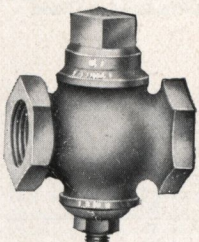
Standard Acid Metal Cocks

For Medium Pressure. Specially Ground to a Perfect Bearing

List Prices—Square or Flat Head

Size.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	
Screwed.....	1.70	2.00	2.50	3.40	4.70	7.40	9.70	14.60	
Flanged.....	....	....	....	11.00	14.60	19.40	23.50	36.00	
Size.....				$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	5	6
Screwed.....				29.00	45.00	77.00	100.00	250.00	450.00
Flanged.....				55.00	86.00	124.00	168.00	300.00	550.00

Also furnished in Standard and Extra Heavy Patterns at special prices.

Fig. 1749A
Acid Metal Cock

Standard Brass Steam Cocks

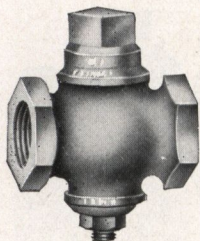


Fig. 1750. Square Head

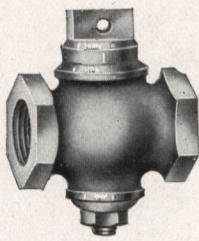


Fig. 1751. Flat Head

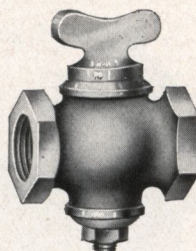


Fig. 1752. Tee Head

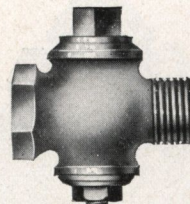


Fig. 1753. Male and Female

Brass Steam Cocks, 125 Pounds Working Steam Pressure

Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Figs. 1750 and 1751	.85	.85	1.00	1.25	1.70	2.35	3.70	4.85	7.30	14.50	22.50	38.50	50.00
Fig. 1752	.85	.85	1.00	1.25	1.70	2.35	3.70	4.85	7.30	14.50	22.50	38.50	50.00
Fig. 1753	...	1.35	1.45	2.00	2.50	3.00	5.35	6.75	9.85	17.50	25.75	...	...

Heavy Brass Steam Cocks

150 Pounds Working Steam Pressure

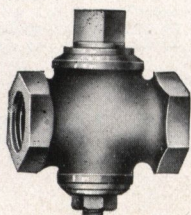


Fig. 1754. Square Head

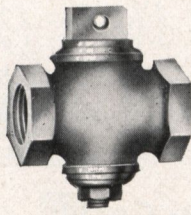


Fig. 1755. Flat Head

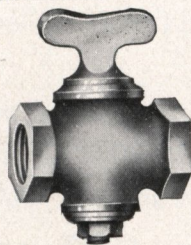


Fig. 1756. Tee Head

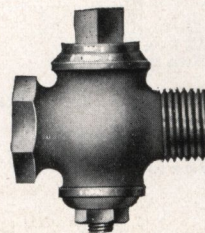


Fig. 1757. Male and Female

Heavy Brass Steam Cocks—150 Pounds Working Steam Pressure

Size	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Figs. 1754 and 1755	.85	.85	1.00	1.25	1.70	2.35	3.70	4.85	7.30	14.50	22.50	38.50	50.00
Fig. 1756	.85	.85	1.00	1.25	1.70	2.35	3.70	4.85	7.30	14.50	22.50	38.50	50.00
Fig. 1757	...	1.35	1.45	2.00	2.50	3.00	5.35	6.75	9.85	...	...	...	...

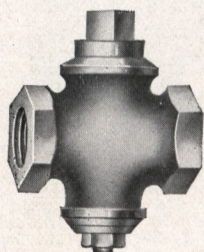


Fig. 1758. Extra Heavy

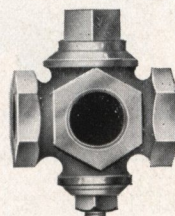


Fig. 1759. Three-way

Extra Heavy Brass Steam Cocks

Extra Heavy Steam Cocks—250 Pounds Pressure

Size	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Each	1.30	1.50	2.00	2.85	4.00	6.75	8.50	13.50	25.00	37.00	54.00	75.00

Three-way, Screwed and Flanged—150 Pounds Pressure

Size	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Screwed	2.10	2.10	2.50	3.00	3.75	5.75	7.15	11.00	18.75	26.00	50.00	70.00
Flanged (Not Illustrated)	...	...	...	...	11.25	14.75	17.75	27.00	38.25	57.00	85.00	121.00

Flanged Brass Steam Cocks

Heavy and Extra Heavy

Heavy Brass Flanged Cocks—150 Pounds Pressure

Size	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Diameter Flanges	4	4 1/2	5	6	7	7 1/2	8 1/2	9
Face to Face	3 3/8	3 3/8	4 3/8	5 1/4	6	8	8 1/2	9
Each	7.30	9.70	11.75	18.00	27.50	43.00	62.00	84.00

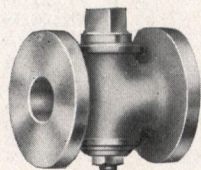


Fig. 1759A. Heavy

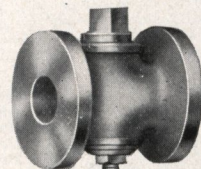


Fig. 1759B. Extra Heavy

Extra Heavy Brass Flanged Cocks—250 Pounds Pressure

Size	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Diameter Flanges	4 1/2	5	6	6 1/2	7 1/2	8 1/2	9	10
Face to Face	3 3/8	3 3/8	4 3/8	5 1/4	6	8	8 1/2	9
Each	10.00	14.25	17.25	27.00	41.00	63.00	84.00	120.00

Standard Iron Cocks

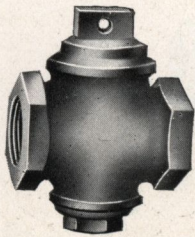


Fig. 1760. Flat Head

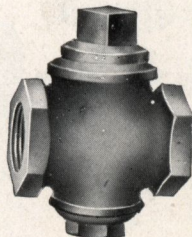


Fig. 1761. Square Head

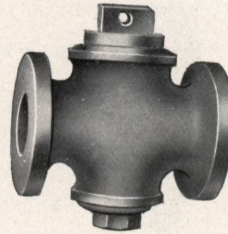
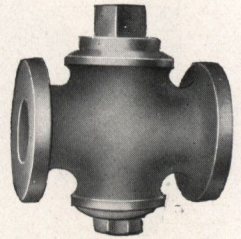


Fig. 1762. Flat Head, Flanged

Fig. 1763
Square Head, Flanged

Standard Iron Cocks—Screwed, 125 Pounds Steam Pressure

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
All Iron	.90	1.05	1.30	1.60	1.95	2.70	4.40	6.75	12.00	15.50	32.00	45.00
With Brass Washer	1.00	1.20	1.55	1.95	2.35	3.20	5.15	7.75	14.00	19.00	38.00	53.00

Standard Iron Cocks, Brass Plug—Screwed, 125 Pounds Steam Pressure

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
Iron, with Brass Plug	1.30	1.60	1.90	2.65	3.75	5.25	8.75	13.00	27.50	36.50	67.00	94.00
With Brass Washer	1.40	1.75	2.15	3.00	4.15	5.75	9.50	14.00	29.50	40.00	73.00	102.00

Standard Iron Cocks—Flanged, 125 Pounds Steam Pressure

Size	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
All Iron	2.25	2.75	3.25	4.25	6.25	9.50	15.00	19.00	36.00	50.00
With Brass Washer	2.50	3.10	3.65	4.75	7.00	10.50	17.00	22.50	42.00	58.00

Standard Iron Cocks, Brass Plug—Flanged, 125 Pounds Steam Pressure

Size	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
Iron, with Brass Plug	3.00	3.75	5.00	7.00	10.50	15.75	30.00	40.00	70.00	100.00
With Brass Washer	3.25	4.10	5.40	7.50	11.25	16.75	32.00	43.50	76.00	108.00
Face to Face	4 1/2	5	5 3/4	5 5/8	6 1/4	7 1/8	9 1/8	10 1/4	12 1/2	13 3/8

Extra Heavy Iron Cocks

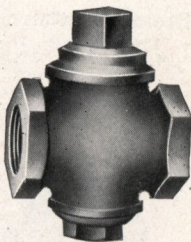


Fig. 1764. Square Head, Screwed

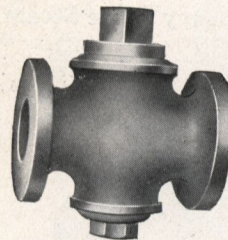


Fig. 1765. Square Head, Flanged

Extra Heavy Iron Cocks—Screwed, 200 Pounds Steam Pressure

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
All Iron	1.15	1.25	1.75	2.10	2.80	3.65	6.50	9.00	16.75	22.50	45.00	62.00
With Brass Washer	1.25	1.40	2.00	2.45	3.20	4.15	7.25	10.00	18.75	26.00	51.00	70.00

Extra Heavy Iron Cocks—Brass Plug—Screwed, 200 Pounds Steam Pressure

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
Iron, with Brass Plug	1.70	2.25	2.80	3.85	5.60	7.00	13.25	19.00	42.00	56.00	98.00	133.00
With Brass Washer	1.80	2.40	3.05	4.20	6.00	7.50	14.00	20.00	44.00	59.50	104.00	141.00

Extra Heavy Iron Cocks—Flanged, 200 Pounds Steam Pressure

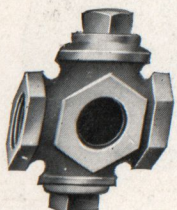
Size	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
All Iron	3.15	3.85	4.90	6.10	9.10	13.30	21.70	28.00		
With Brass Washer	3.40	4.20	5.30	6.60	9.85	14.30	23.70	31.50		
With Brass Plug	4.20	5.60	7.70	9.45	16.10	23.10	46.90	61.60		
With Brass Washer	4.45	5.95	8.10	9.95	16.85	24.10	48.90	65.10		
Face to Face	4	4 1/2	5 1/2	6 1/2	7 1/2	8 1/2	10	11		

Three-way Iron Cocks—Screwed, 125 Pounds Steam Pressure

Size	1/2	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
All Iron	1.65	1.80	2.05	2.65	3.65	5.35	7.50	14.00	19.00	36.50	52.00
Brass Washer	1.80	2.05	2.40	3.05	4.15	6.10	8.50	16.00	22.50	42.50	62.00
Brass Plug	2.20	2.40	3.10	4.50	6.25	9.75	13.75	30.00	40.00	71.50	100.00
Brass Washer	2.35	2.65	3.45	4.90	6.75	10.50	14.75	32.00	43.50	77.50	108.00

Flanged (Not Illustrated) 125 Pounds Steam Pressure

Size	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6
All Iron	3.75	4.25	5.25	7.00	9.00	12.75	20.00	26.00	44.00	60.00
Brass Washer	4.00	4.60	5.65	7.50	9.75	13.75	22.00	29.50	50.00	68.00
Brass Plug	4.50	5.25	7.00	9.50	13.25	19.00	36.00	47.00	80.00	108.00
Brass Washer	4.75	5.60	7.40	10.00	14.00	20.00	38.00	50.50	86.00	116.00
Face to Face	5	5 1/2	6	7	7 1/2	8 3/4	10	11	12 1/2	13 3/8

Fig. 1766
Three-way

Brass Cocks, Vulcanized Asbestos Packed

For 150 Pounds Working Pressure

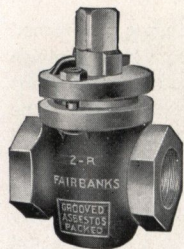


Fig. 1770
Screwed Ends
Sizes $\frac{1}{4}$ to 2 inch



Fig. 1771
Screwed Ends
Sizes $2\frac{1}{2}$ to 4 inch



Fig. 1772
Flanged Ends
Sizes 1 to 2 inch



Fig. 1773
Flanged Ends
Sizes $2\frac{1}{2}$ to 4 inch

Brass Cocks, Vulcanized Asbestos Packed

Size	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{2}$	$2\frac{1}{2}$	3	$4\frac{1}{2}$	6
Screwed, each	3.35	3.35	3.35	4.20	5.60	8.00	10.35	16.00	26.50	37.50
Flanged, each					10.50	12.50	14.50	26.00	38.00	49.00
End to End, Screwed	$2\frac{3}{8}$	$2\frac{3}{8}$	3	$3\frac{3}{8}$	4	$4\frac{3}{8}$	$5\frac{1}{4}$	6	7	$8\frac{1}{4}$
Face to Face, Flanged					$5\frac{1}{2}$	$5\frac{3}{4}$	$5\frac{7}{8}$	$7\frac{1}{8}$	$8\frac{1}{4}$	$9\frac{1}{4}$
Diameter Flanges					4	$4\frac{1}{2}$	5	6	7	$7\frac{1}{2}$

Iron Cocks, Vulcanized Asbestos Packed

125 Pounds Steam, 150 Pounds Water Working Pressure



Fig. 1774
Screwed Ends
Sizes $\frac{1}{2}$ to 2 inch



Fig. 1775
Screwed Ends
Sizes $2\frac{1}{2}$ to 6 inch



Fig. 1776
Flanged Ends
Sizes 1 to 2 inch



Fig. 1777
Flanged Ends
Sizes $2\frac{1}{2}$ to 6 inch

Iron Cocks—Vulcanized Asbestos Packed

Size	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{2}$	$2\frac{1}{2}$	3	$4\frac{1}{2}$	6
Screwed, each	1.30	1.30	1.45	1.60	2.10	2.50	3.50	4.75	7.00	12.00	18.00
Flanged, each						2.50	3.50	4.75	7.00	12.00	18.00
End to End, Screwed	$2\frac{3}{8}$	$2\frac{3}{8}$	$2\frac{3}{8}$	3	$3\frac{3}{8}$	4	$4\frac{3}{8}$	$5\frac{1}{4}$	6	$7\frac{1}{4}$	$8\frac{1}{4}$
Face to Face, Flanged						$5\frac{1}{2}$	$5\frac{3}{4}$	$5\frac{7}{8}$	$7\frac{1}{8}$	$8\frac{1}{4}$	$9\frac{1}{4}$
Diameter, Flanges						4	$4\frac{1}{2}$	5	6	7	$7\frac{1}{2}$

Heavy Iron Asbestos Packed Cocks

For 175 Pounds Steam Working Pressure

Size	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$4\frac{1}{2}$	6
Screwed, each	1.50	1.75	2.00	2.50	3.00	4.25	5.75	8.50	14.50	21.50	32.50
Flanged, each					3.00	4.25	5.75	8.50	14.50	21.50	32.50
End to End, Screwed	$3\frac{1}{4}$	$3\frac{1}{4}$	$3\frac{3}{8}$	$4\frac{1}{8}$	$4\frac{3}{4}$	$5\frac{3}{8}$	$5\frac{7}{8}$	$6\frac{3}{8}$	$7\frac{3}{4}$	10	$10\frac{1}{2}$
Face to Face, Flanged					4	$4\frac{1}{4}$	$4\frac{3}{8}$	$4\frac{7}{8}$	$5\frac{3}{4}$	$6\frac{1}{4}$	$6\frac{3}{4}$
Diameter Flanges					4	$4\frac{1}{2}$	$4\frac{3}{4}$	5	6	$6\frac{1}{2}$	$6\frac{3}{4}$

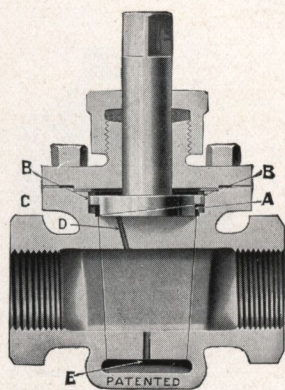
Extra Heavy Iron Asbestos Packed Cocks

For 250 Pounds Steam Working Pressure

Size	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{2}$	$2\frac{1}{2}$	3	$4\frac{1}{2}$	6
Screwed, each	2.40	3.00	3.50	5.00	6.75	10.00	17.00	26.00
Flanged, each			3.50	5.00	6.75	10.00	17.00	26.00
End to End, Screwed	$3\frac{3}{4}$	$4\frac{1}{8}$	$4\frac{3}{4}$	$5\frac{3}{8}$	$5\frac{7}{8}$	$6\frac{3}{8}$	$7\frac{3}{4}$	$10\frac{1}{2}$
Face to Face, Flanged	4	$4\frac{1}{4}$	$4\frac{3}{8}$	$5\frac{3}{8}$	$5\frac{7}{8}$	8	10	$11\frac{1}{2}$
Diameter Flanges	4	$4\frac{1}{2}$	$4\frac{3}{4}$	$5\frac{1}{4}$	6	$6\frac{1}{2}$	$7\frac{1}{2}$	9

Balanced Plug Valves—Brass

For Steam, Compressed Air and Hydraulic Pressures

Fig. 1780
Straightway Plug Valve

This valve is so constructed that when it is closed the plug is at the same time forced firmly to its seat. This result is secured by means of the traveling cam "A" through which the stem passes. The cam is prevented from turning with the stem by means of the lugs "B" which move vertically in slots. Supposing the valve to be open, the cam will be in the lower part of the chamber in which it is placed, and the plug will be free to be easily moved. A quarter of a turn in the direction for closing it causes the cam to rise and take a bearing on the upper surface of the chamber, and the only effect of further effort to turn the stem in that direction is to force the plug more firmly to the seat. A slight motion in the other direction immediately releases the cam and the plug turns easily, being arrested at its proper open position by contact of the fingers of the cam at the other end of its travel. E. D. are balancing ports which allow the pressure to predominate at the top of plug, holding it gently in its seat while valve is open.

It will therefore be seen that when the pressure passes through the valve, the seat is absolutely protected from wear; that the plug is balanced and held in place by the pressure when open, and that when closed it is locked in the seat by the wedging cam, insuring freedom from friction in seat while plug is turning, and further insuring a quick and easy operation and continuous dependability.

Made in all sizes up to six inches, and for all pressures up to 5000 pounds per square inch. Made in Straightway, Three and Four-way.

Brass Straightway Valves—Screwed and Flanged

For 200 Pounds Working Pressure

Size.....	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
End to End, Screwed.....	2 1/8	2 1/8	2 1/8	2 3/8	3 1/4	3 3/8	4 1/4	4 1/2	6 1/2	6 1/2	8 1/2	8 1/2	10
Screwed, each.....	3.83	3.83	4.00	4.50	5.37	7.17	9.60	13.40	23.30	35.00	60.40	104.13	120.40
Flanged, each.....						16.66	19.20	26.70	35.00	46.40	82.90	110.50	136.00
Face to Face, Flanged.....						4 3/8	5	6	7 3/8	8	9 1/2	12 1/4	.....
Diameter of Flanges.....						3 3/8	4 1/2	5	6	7	8	8 1/2	9

Brass Straightway Valves—Screwed and Flanged

For 500 Pounds Working Pressure

Size.....	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6
End to End, Screwed.....	2 1/8	2 1/8	2 3/8	2 3/8	3 3/8	4 1/8	4 5/8	5 1/8	6 3/8	7 1/8	10	12 1/2	12 1/2	17 1/2
Screwed, each.....	4.20	4.20	5.00	7.30	9.16	11.70	16.60	21.30	31.60	50.00	95.30	160.23	183.33	233.30
Flanged, each.....						23.30	25.00	29.00	45.00	70.00	116.60	193.30	226.60	288.10
Face to Face, Flanged.....						4 3/8	6 1/4	6 1/2	8 1/2	9 3/8	11	12 1/2	14	16
Diameter of Flanges.....						4 1/2	5	6	6 1/2	7 1/2	8 1/4	10	11 1/4	12 1/2

Brass Straightway Valves—Screwed and Flanged

For 1500 Pounds Working Pressure

Size.....	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
End to End, Screwed.....	3 1/4	3 3/4	4 1/4	5 1/4	6	7	7 1/4	7 3/8	9 3/4	10
Screwed, each.....	6.40	6.40	10.60	15.60	24.20	31.30	41.90	44.50	80.00	126.60
Flanged, each.....					31.87	44.90	58.60	66.60	133.90	191.76
Face to Face, Flanged.....					7	7 1/2	8	8 1/2	9 1/2	11
Diameter of Flanges.....					4	4 1/2	5	6	7	7 1/2

Brass Straightway Valves—Screwed and Flanged

For Pressures to and Including 3000 Pounds

Size.....	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Screwed, each.....	15.96	29.76	38.26	53.13	63.76	73.13	116.86	170.00	340.00
Flanged, each.....			48.90	59.50	82.86	138.13	217.83	.....	.....
End to End, Screwed.....	5 1/4	6	7 1/4	8 1/2	11	11 1/2	10	.....	.....
Face to Face, Flanged.....			7	8 1/2	11	11 1/2	10	.....	.....

Brass Straightway Valves—Screwed and Flanged

For Pressures to and including 5000 Pounds

Size.....	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Screwed, each.....	17.00	23.36	38.26	51.00	63.76	89.26	165.76	255.00
Flanged, each.....					80.76	137.10	225.26	297.50
End to End, Screwed.....	5 1/4	6 1/8	6 3/8	7 1/4	7 1/2	9 3/8	10	11

Prices are for Valves complete, including Malleable Iron Wrench.

Three-way Balanced Plug Valve—Brass

For Water, Air or Steam

The three-way construction and operation is the same in principle as the straightway. It has the internal locking device which forces the plug tight to the seat of the valve at both extremes of the arc in which the plug turns.

Either one of the three arrangements of ports or openings shown in Figs. D, E and F can be used.

The valve with the two-port plug, as shown in Fig. D, is used in the majority of cases, and if not otherwise specified this style is always shipped.

When a three-port arrangement is necessary so that all the ports can be opened at one time, this detail should be specified in ordering.

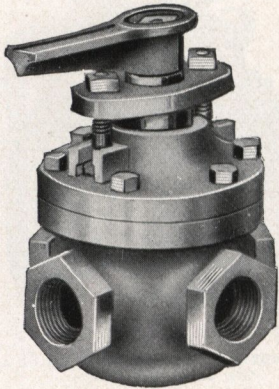
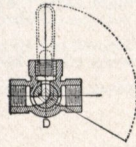
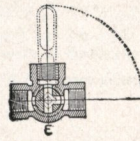


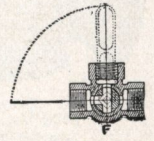
Fig. 1790
Three-way Balanced Plug Valve



2-Port Plug



3-Port Plug



3-Port Plug

Brass Three-way Balanced Plug Valves—Screwed and Flanged

For 200 Pounds Working Pressure

Size	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
End to End of Run, Screwed	2 1/2	3	3 1/2	4 1/2	4 3/4	5 1/2	6 1/2	7 1/2	10
Center Run to End of Side Opening, Screwed	1 1/4	1 1/2	1 3/4	2 1/4	2 3/4	2 3/4	2 3/4	5 1/4	5 1/4
Screwed, each	6.34	6.67	9.90	15.80	19.30	22.90	36.60	60.80	93.30
Flanged, each				21.30	26.60	33.20	50.00	80.80	99.86
Face to Face of Run				4	4 3/4	5 3/4	7 1/2	9 1/2	10 3/4
Center Run to Face Side Opening				2	2 3/8	2 1/2	4 1/4	5 1/2	6
Diameter of Flanges				4 1/2	4 7/8	5	6	7	7 1/2

Brass Three-way Plug Valves—Screwed and Flanged

For 600 Pounds Working Pressure

Size	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6
End to End of Run, Screwed	3 1/4	3 1/4	4 1/4	4 1/2	5 3/4	6	6 3/4	9	9 3/4	12 1/4		
Center of Run to End of Side Opening, Screwed		2 3/8	2 3/8	2 3/8	3 3/8	3 1/2	4 1/4	4 1/2	5	6 1/8		
Screwed, each	10.00	12.20	20.00	24.23	31.26	36.03	47.83	71.73	119.56	208.26	233.76	340.00
Flanged, each				31.86	39.33	46.77	68.00	102.00	148.76	255.06	318.76	446.26
Face to Face of Run					5 3/4	6 5/8	8	10	10 3/4	14 1/2	16	16 1/2
Diameter of Flanges				4 1/2	5	6	6 1/2	7 1/2	8 1/4	10	11	12 1/2

Brass Three-way Plug Valves—Screwed

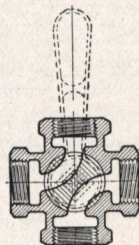
For 1500 Pounds and 3000 Pounds Working Pressure

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
For 1500 Pounds, each	25.50	34.00	38.26	53.13	68.00	110.50	174.26
For 3000 Pounds, each	38.00	50.00	60.00	72.26	121.13	210.80	
End to End, 1500 Pounds, Valve	4 1/2	4 1/2	5 3/4	9 1/8	10 1/4	12 1/8	
End to End, 3000 Pounds, Valve	4 1/2	6	6 7/8	9	10 3/8	12 1/8	

Brass Four-way Plug Valves—Screwed and Flanged

For Working Pressures 600, 1500 and 3000 Pounds

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
600 Pounds, Screwed	20.10	25.10	45.10	51.00	64.60	90.90	122.10	180.60
End to End, Screwed	4 1/4	5	5 7/8	6 1/2	7 1/4	9 1/4	11 1/4	11 3/4
1500 Pounds, Screwed	31.88	44.63	63.36	72.26	90.86	140.26	199.76	
End to End	5	5 5/8	6 3/8	7 3/8	9 1/8	11 3/8	11 3/8	
3000 Pounds, Screwed	46.72	59.52	70.08	95.66	127.56	233.60		
End to End	6	6 3/8	7 3/8	9 1/8	11 3/8	11 3/8		



Further information, prices, etc., will be furnished regarding Flanged Four-way Valves on detailed specification as to service.

The four-way construction and operation is the same in principle as the straightway.

Sizes under 1 inch have screwed bonnet instead of bolted, as illustrated. Diagram shows port arrangement in four-way valve.

Prices for valves include wrench.

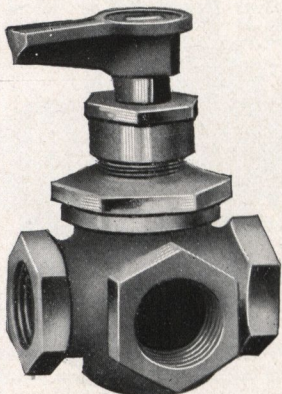


Fig. 1791
Brass Four-way Balanced Plug Valve

Balanced Plug Valves

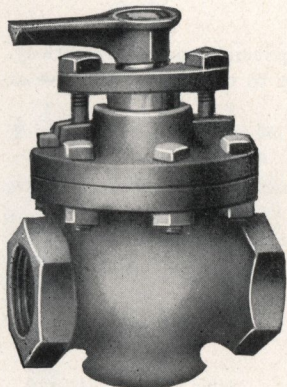
Semi-Steel and Steel Body
Brass Plug

Fig. 1800. Semi-Steel Balanced Plug Valve, Screwed

These valves are designed for 200 pounds working pressure. In the Brass Plug Pattern a brass plug is fitted and ground into a semi-steel body, and is especially adapted for air and cold water pressures. It is not recommended for steam, or on any service where it is subject to heat, as the difference in the expansion of the two metals might cause the plug to stick.

Semi-steel is closely grained and extremely tough, having a tensile strength $2\frac{1}{2}$ times that of the average cast iron.

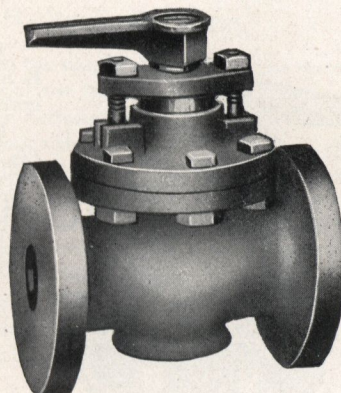


Fig. 1801. Semi-Steel Balanced Plug Valve, Flanged

Straightway Valves—Screwed and Flanged

Semi-Steel and Steel Body. Brass Plug. For 200 Pounds Pressure

Size	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$	3	4	5	6
Screwed, each	10.22	12.80	16.66	24.00	35.55	62.22	97.82	137.82	151.15
Flanged, each	12.22	15.55	20.00	31.69	47.55	82.22	120.00	166.66	217.77
End to End, Screwed	4 $\frac{1}{8}$	4 $\frac{3}{8}$	5	6 $\frac{1}{2}$	7 $\frac{1}{4}$	10	12 $\frac{1}{2}$	12 $\frac{1}{2}$	17 $\frac{1}{2}$
Face to Face, Flanged	4 $\frac{7}{8}$	5 $\frac{3}{4}$	6 $\frac{1}{2}$	8 $\frac{1}{4}$	9 $\frac{3}{8}$	11	12 $\frac{1}{2}$	14	16
Diameter of Flanges	4 $\frac{1}{2}$	5	6	6 $\frac{1}{2}$	7 $\frac{1}{2}$	8 $\frac{1}{4}$	10	11 $\frac{1}{4}$	12 $\frac{1}{2}$

Three-way Valves—Screwed and Flanged

Semi-Steel and Steel Body. Brass Plug. For 200 Pounds Pressure

Size	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$	3	4	5	6
Screwed, each	19.86	23.33	26.66	40.00	55.55	75.55	137.77	177.77	244.44
Flanged, each	26.66	31.11	34.66	52.26	75.60	100.05	155.55	200.00	271.15
End to End Run, Screwed	4 $\frac{3}{4}$	5 $\frac{3}{8}$	6	6 $\frac{3}{4}$	9	10	12 $\frac{1}{4}$	.....	.....
Center Run to End Side Opening, Screwed	2 $\frac{1}{2}$	3 $\frac{3}{8}$	3 $\frac{1}{4}$	3 $\frac{1}{2}$	4 $\frac{1}{2}$	5 $\frac{3}{4}$	6 $\frac{1}{8}$	.....	.....
Face to Face, Flanged	.....	5 $\frac{3}{4}$	6 $\frac{3}{8}$	8	10	10 $\frac{3}{4}$	.....	.....	.....

Four-way Valves—Screwed Ends

Semi-Steel and Steel Body. Brass Plug. For 200 Pounds Pressure

Size	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$	3
Screwed	47.15	48.88	66.65	88.88	127.69	177.77
End to End of Run	5 $\frac{7}{8}$	6 $\frac{1}{2}$	7 $\frac{1}{4}$	9 $\frac{1}{4}$	11 $\frac{1}{4}$	11 $\frac{3}{4}$

The bodies of these valves are semi-steel. The brass plug construction is suitable for any service where the valve does not become heated.

These valves are made on the same general principle as illustrated in sectional straightway pattern, and employ the same internal locking device.

All Semi-Steel—200 Pounds Working Pressure

Size, inches	$\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$	3	4	5	6
Straightway, Screwed	10.66	14.67	16.00	21.92	36.00	60.00	88.00	124.00	172.00	.....
Straightway, Flanged	14.67	16.00	21.33	28.53	46.83	78.03	108.00	150.03	196.00	.....
Three-way, Screwed	21.33	26.66	29.33	40.00	57.33	75.63	144.00	186.66	220.00	.....
Three-way, Flanged	26.66	32.00	34.66	47.04	64.00	85.33	160.00	202.66	244.00	.....
Four-way, Screwed	23.68	42.35	48.00	60.80	77.33	114.93	160.00	.....	.....	.....

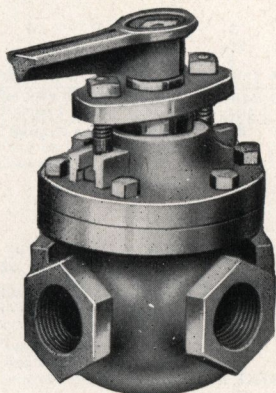


Fig. 1802. Semi-Steel Four-way Balanced Plug Valve

Angle Pattern Balanced Plug Valve

Opens and Closes with a $\frac{1}{4}$ turn, same as Straightway and employs same locking device

Size	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$	3
Screwed, Semi-steel body	13.33	15.55	22.22	30.00	44.44	80.00
Flanged, Semi-steel body	15.55	18.88	26.66	31.69	56.44	86.66
Screwed, all Semi-steel	16.00	18.66	21.33	34.66	48.00	85.33
Flanged, all Semi-steel	18.66	21.33	26.66	36.00	50.00	90.66

Locking Cock

Similar to straightway valve, but is open at top and bottom. Opens and closes with $\frac{1}{4}$ turn, and locking device holds plug tightly to its seat at each end of the turn.

Prices are for semi-steel with brass plug.

Size	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$	3
Each	5.16	8.88	11.69	16.66	23.47	40.00

Prices are for valves complete with wrench.

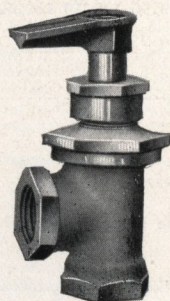


Fig. 1803. Balanced Plug Valve, Angle Pattern

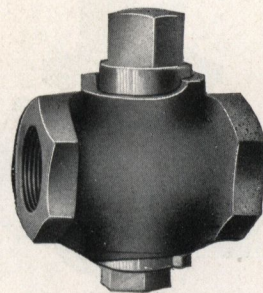


Fig. 1804 Locking Cock

Chronometer Governor and Regulator Valves

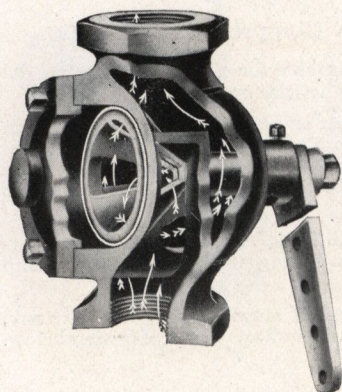


Fig. 1810. Without Yoke, Screwed

Chronometer Valves are useful for a large variety of purposes requiring a simple, durable and easy working valve, and have been especially successful on steam pump and air compressor governors, float valves for tanks, and automatic devices. These valves are made in two styles—with and without outside yoke. Interior construction is the same in both.

Fig. 1811 shows outside yoke type, which, with a set screw, forms a bearing for the end of the stem, regulating the closeness of contact of the valve with its seat and consequent friction, so that varying degrees of sensibility may be obtained, according to the requirements of the service. It is also fitted with a stuffing box. When close regulation and easy working are essential, or a possible leakage around the stem under high pressure would be objectionable, the yoke pattern should be used.

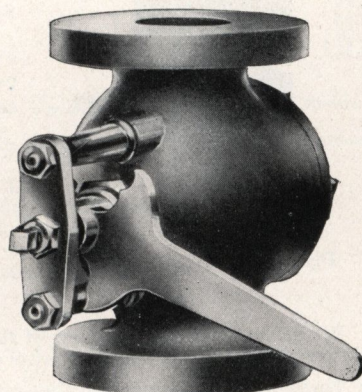


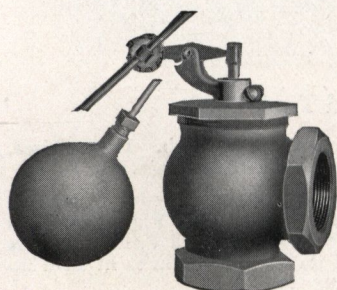
Fig. 1811. With Yoke, Flanged

Chronometer Valves

Size.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	4	5	6
Iron Body, without Yoke.....	12.00	18.00	23.00	30.00	40.00	50.00	60.00	75.00	110.00	150.00	200.00	250.00
Bronze Body, without Yoke.....	15.00	22.00	30.00	40.00	50.00	60.00	70.00	90.00	130.00	180.00	240.00	300.00
Iron Body, with Yoke.....	20.00	20.00	25.00	30.00	40.00	50.00	60.00	70.00	90.00	130.00	180.00	240.00
Bronze Body, with Yoke.....	20.00	20.00	25.00	30.00	40.00	50.00	60.00	70.00	90.00	130.00	180.00	240.00

Note: Sizes 4 inch and larger, flanged. Valves tested to 200 pounds. Bronze valves for working pressures to 150 pounds. Iron, 125 pounds. Furnished extra heavy to order for steamship work.

Auxiliary Operated Float Valve—Angle and Globe

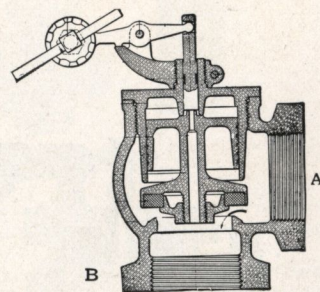
Fig. 1812
Auxiliary Operated Float Valve

Operation: Inlet is at A, outlet at B. Nominally the main valve rests on its seat, and the valve is open when water line is below the float.

The main valve is loosely fitted in chamber which allows the water to leak past it, filling the chamber above the piston. Excess leakage escapes from annular space through central part of main valve.

Water pressure entering at A exerts a pressure on the underside of main valve, and opens it, allowing the water to discharge at B. The flow continues until the float rises and closes valve.

Closing valve allows the water pressure to accumulate in the annular space above main valve and forces the latter to its seat, thereby stopping all flow from the supply pipe. When the water level in tank falls, the float drops, lifts valve and allows water in the annular space to escape and open main valve.

Fig. 1813
Section

Size.....	$\frac{3}{8}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	4	5	6	8
Screwed.....	6.50	8.00	9.50	12.00	20.00	40.00	60.00	88.00	110.00	150.00	200.00
Flanged.....	.....	.....	.....	.....	25.00	45.00	65.00	93.00	115.00	155.00	.....

Pump Regulating Valve

For Elevator, House, Fire and Boiler Feed Pumps, and Air Compressors

Stock bodies for all sizes are extra heavy, and suitable for steam pressures to 200 pounds. Screwed patterns will be furnished unless otherwise ordered.

This Regulator contains no diaphragms, being built on piston-actuated construction—leather packed for cold water and solid metal piston construction for hot water, oil or liquid. The steam valve is single seated balanced construction, insuring a true balanced valve and ease of repair should reseating be necessary, and the spring is so situated that it is not subjected to excessive heat.

This Regulator used in connection with Balanced Tank Valve, Fig. 1821, is unexcelled in all-around usefulness and reliability in controlling the action of the pump by the slightest variation of water level in roof tank.

In ordering state water pressure to be maintained, if closed tank. If open tank, so advise, as a Fig. 1821 tank valve is then necessary, as indicated in illustration below.

Price List

Size	1	1½	2	2½	3	4	5	6
Each	20.00	25.00	30.00	35.00	40.00	50.00	85.00	125.00

Furnished for brine pumps at a small extra charge.

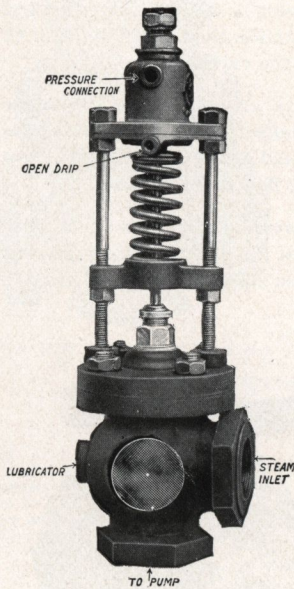


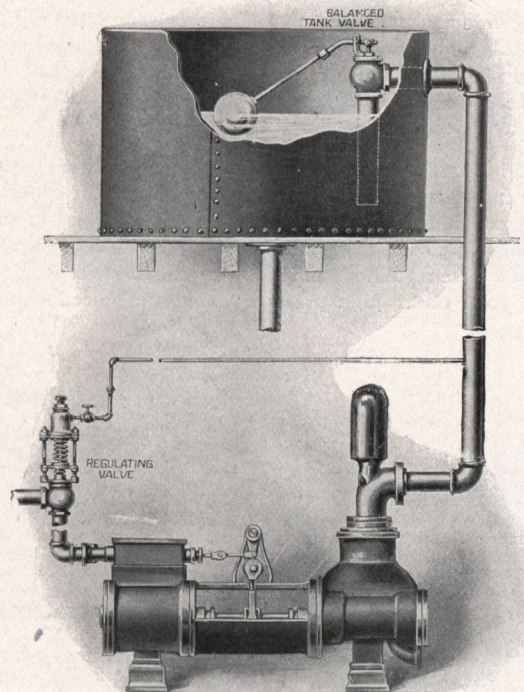
Fig. 1820
Pump Regulating Valve

We illustrate an arrangement of Pump Regulating Valve and Balanced Tank Valve for the control of Open Tank systems.

These valves will maintain the water level in the tank within one inch, and render the system automatic, no attention being required after the pump has been started.

By utilizing the valves as shown, the system serves a double purpose, viz.: a constant, steady house supply, and fire pump service—the latter being due to the ability of the tank valve to operate on high pressure as well as low; therefore any pressure can be maintained in the delivery pipe for fire service.

This installation has been found superior to the tell-tale pipe system, as it is impossible for the pipe to become air-bound, and the excess pressure in the discharge line is always sufficient to insure a positive operation of the regulator and a wholly automatic and dependable pump control.



Balanced Tank Valve

Made in brass in sizes 1 inch to 1½ inch. Larger sizes, cast iron, screwed pattern with brass trimmings.

Tanks having a supply of 1 inch or larger require a reliable float valve to insure against overflowing. Fig. 1821 fulfils this requirement, and can be applied to all water pressures as high as 75 pounds, and on higher pressures in sizes up to 3 inch.

Construction permits the use of a very small float, and method of installation in open tank is shown in above illustration.

Price List, with Float

Size	1	1¼	1½	2	2½
Each	10.00	12.00	15.00	20.00	25.00
Size	3	4	5	6	
Each	35.00	50.00	80.00	110.00	

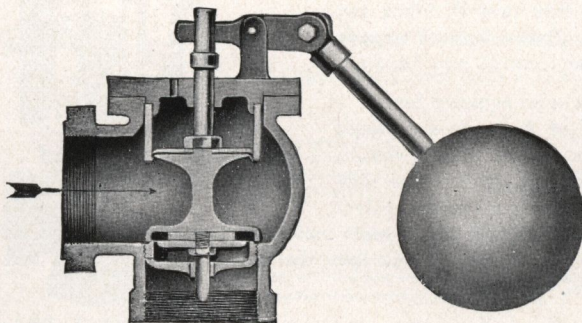


Fig. 1821
Balanced Tank Valve, with Float

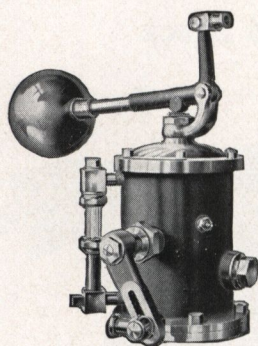


Fig. 1830
Pump Governor

The Mason Steam Pump Speed Governor

The Mason Steam Pump Speed Governor is to the direct-acting steam pump what the ordinary ball governor is to the steam engine. It derives its motion from some reciprocating part of the pump and controls a balanced valve placed in the steam pipe, thereby exactly regulating the amount of steam to the requirements of the pump, and automatically maintaining a uniform speed regardless of any variation of steam or load. By the use of a key the speed of the pump can be changed if desired, while the pump is in motion.

These governors are extensively used on direct-acting steam pumps (both single and duplex), also on all classes of fly-wheel pumps, including vacuum pumps, air compressors and ice machines.

Always state when governors are to be used on direct-acting duplex pumps, as a slight modification is necessary on all governors (except double-acting) to prevent the fall of the governor ball, and the consequent excess opening of the balanced valve, during the momentary pause of the piston, incident to duplex pumps.

Governors Without Balanced Valves

Size No. 1, suitable for operating Balanced Valves, $\frac{1}{2}$ to 2 inch inclusive, each	45.00
Size No. 2, suitable for operating Balanced Valves, $2\frac{1}{2}$ to 4 inch inclusive, each	60.00
Size No. 3, suitable for operating Balanced Valves, 4 $\frac{1}{2}$ inch and larger, each	80.00
Size No. 3. Double-acting for Direct-acting Duplex Pumps, with Steam Supply, $2\frac{1}{2}$ inch and above	125.00

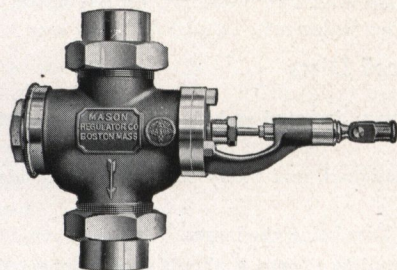


Fig. 1831
Union Ends with Valve
Stem Guide
Styles A and B Piston Type

Balanced Valves

Style A, Piston type, should always be used with Mason Speed Governors.

Also made in following types:

Style B, Piston Valve with Yoke and Lever.

Style C, Bevel-seated Valve with Valve Stem Guide.

Style D, Bevel-seated Valve with Yoke and Lever.

Sizes $\frac{1}{2}$ to $1\frac{1}{2}$ all bronze with union ends.
 Sizes 2 inch and larger, iron body, bronze wearing parts.
 Flanged, extra heavy diameter.

Balanced Valves

Size	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Each	5.50	6.50	8.00	9.00	10.50	13.00	19.50	25.00
Size	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6	8	10	12
Each	31.00	37.00	55.00	75.00	103.00	160.00	200.00	286.00

Mason Steam Pump Pressure Regulator

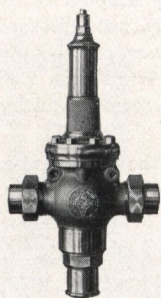


Fig. 1832. Key Style

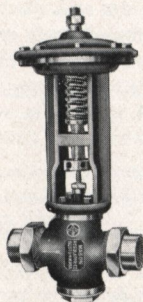


Fig. 1833. Spring Type



Fig. 1834. Lever Type

These regulators are designed for controlling the discharge pressure on Fire, Boiler Feed, Air and Waterworks Pumps, or any class of pumping machinery where it is necessary to maintain a constant pressure, and particularly for pumps operating on a wide variation in load.

Key Style and Spring Type Bronze Union Ends, for steam pressures to 250 pounds, and discharge pressure between 20 and 140 pounds. Key Style and Spring Type I. B., Flanged, for steam pressures to 180 pounds, and discharge pressures between 20 and 140 pounds. Lever Style for larger sizes of pumps. I. B., Flanged only, for 180 pounds steam pressure and discharge pressures between 20 and 200 pounds. Lever Style made only in sizes 2 inch and larger. In ordering, specify pressure conditions.

Mason Steam Pump Pressure Regulators

Size	1½	¾	1	1¼	1½	2	2½	3	3½	4
Key Style and Lever Type, Bronze, with Unions	20.00	20.00	25.00	30.00	42.00	55.00	68.00	85.00	100.00	115.00
Key Style and Lever Type, I. B., Flanged						55.00	68.00	85.00	100.00	115.00
Spring Type, Bronze, with Unions	18.00	18.00	22.00	28.00	35.00	44.00				
Spring Type, I. B., Flanged							57.00	72.00	85.00	100.00

The Nason Quick-opening Valve with Balanced Discs

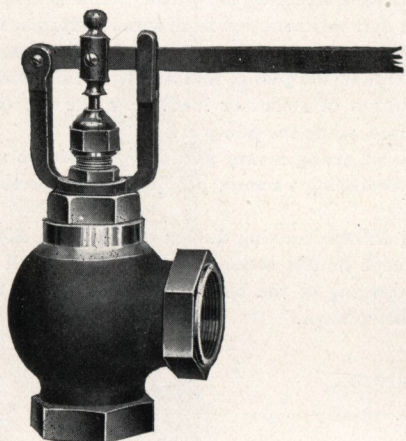
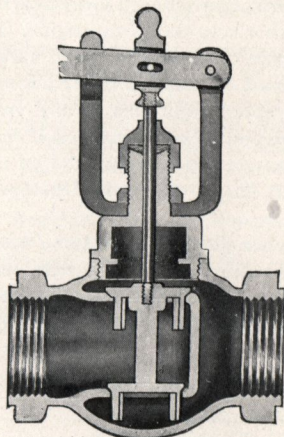


Fig. 1840

Angle Quick-opening Valve



Section

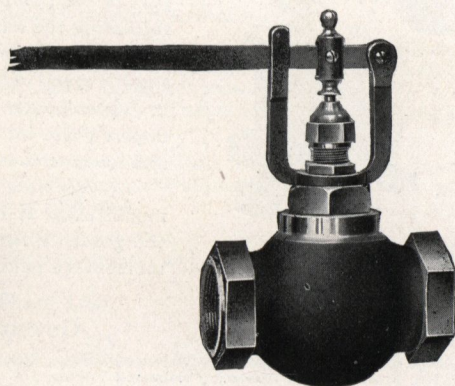


Fig. 1841

Globe Quick-opening Valve

The Nason Quick-opening Valve with Balanced Discs

The Nason Quick-opening Valve is the pioneer in valves of this type, having been designed and placed on the market by us some forty years ago.

It was quickly adopted as the Standard for all conditions for which it was designed, and today enjoys a world-wide popularity as the one wholly dependable valve of its type.

It will be observed that the Bevel Discs differ slightly in diameter—the upper Disc being the larger.

Where the valve is operated under conditions requiring extended periods of complete closure, it should be so connected in the pipe line that the pressure will act downward on the larger seat, thereby holding the valve tightly closed.

For conditions where it is necessary to compensate for the differential disc areas, a counter-weight is furnished for attachment to the lever. This weight is supplied only when specifically ordered, and at an extra price.

The yoke has a swivel action, and can be placed in any desired position. These valves can be furnished without yoke and with spindle plain at top; but unless otherwise specified they are shipped with yoke and lever.

These valves are widely used with steam, air, gas, water and other fluids, and are especially adapted for use in connection with various automatic controlling devices, such as forced draft and temperature controllers, water motors, feed water heaters, condensation tanks, hot wells, tank-feeding valves, and in the control of pumps, engines, etc., by means of tank floats or cables to distant points, and as a Throttle Valve for Donkey and Hoisting Engines. The Nason Balanced valve is the recognized standard in the natural gas fields, and, in fact, in every field, and for all purposes requiring a positive, sensitive, quick-opening and closing operation.

Infinite care is exercised in the manufacture of these valves to insure a perfect seating of the discs, and each valve is carefully tested under 125 pounds steam pressure before leaving the factory.

All sizes $\frac{3}{4}$ inch to 4 inch inclusive are carried in stock in Screwed Brass Globe Pattern.

Sizes $3\frac{1}{2}$ inch and 4 inch are carried in stock in all Brass and Iron Body, Brass Mounted.

To meet a recent demand for a Balanced Valve in the Angle pattern, we have added sizes $\frac{3}{4}$ inch to 2 inch inclusive.

The Nason Balanced Valves are made with Screwed Ends only.

For pressures exceeding our Standard test of 125 pounds, we can furnish these valves in Phosphor Bronze. Such valves are made to order only, at special prices, and are suited for working steam pressures to 150 pounds.

Prices—Dimensions

Size, inches	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Globe or *Angle, Brass, each	5.50	5.80	7.50	9.50	14.00	18.50	30.50	53.50	70.00
Globe only, Iron Body, Brass Mounted, each	.....	.....	.....	.....	.....	.....	.....	37.00	47.00
Center to Face, Globe and *Angle, inches	$1\frac{3}{8}$	$1\frac{5}{8}$	2	$2\frac{5}{16}$	$3\frac{1}{4}$	$3\frac{1}{4}$	$3\frac{7}{8}$	$4\frac{7}{8}$	$5\frac{1}{2}$
Center to Top of Stem, Globe and *Angle, inches	$6\frac{1}{4}$	$6\frac{3}{4}$	$7\frac{1}{4}$	$7\frac{1}{8}$	8	9	$9\frac{7}{8}$	$11\frac{1}{4}$	$11\frac{1}{2}$

*Angle in sizes to 2 inch inclusive.

Balanced Valve with Lever

Suitable for any Working Pressure Up to 200 Pounds

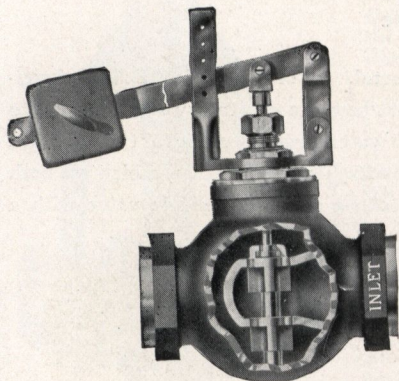


Fig. 1850. Balanced Valve

This Balanced Valve is designed to meet all conditions requiring a perfectly balanced valve which is not affected by pressure but which is operated by some outside force in connection with the lever. The inner valve is of the double seated sliding piston type, which is the only type that can be used in a perfectly balanced valve. This inner valve is connected to the lever by a stem and yoke, the stem being guided by a stuffing box. Provision is made in the post which guides the lever for limiting the throw of the valve. Valves up to and including 1½ inch have a swivel head which will permit the shifting of the lever to any direction. Larger valves can be equipped with swivel-heads when so ordered.

This valve can be used in connection with steam, air, gas, water and other fluids, and is especially adapted for feed-water heaters, condensation tanks, hot wells, tank-feeding throttle valves, quick-opening and closing valves, and for all purposes requiring a perfectly balanced valve.

Valves up to $1\frac{1}{4}$ inch inclusive have bronze bodies; $1\frac{1}{2}$ inch and over have iron bodies with bronze trimmings. Sizes from $\frac{1}{2}$ inch to $1\frac{1}{2}$ inch inclusive have screwed ends only; from 2 inch to 6 inch inclusive have either screwed or flanged ends; 7 inch and over have flanged ends only. Unless otherwise ordered, screwed end valves are sent on orders for sizes less than 6 inch. Furnished with bevel discs when required.

Size, inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$
Each	6.50	6.50	8.00	9.50	11.00	14.00	19.00	25.00	30.00
Length, Screwed Valves, inches	$3\frac{1}{4}$	$3\frac{1}{4}$	4	$4\frac{1}{2}$	$6\frac{3}{4}$	$7\frac{7}{8}$	$7\frac{7}{8}$	$9\frac{1}{4}$	$10\frac{3}{4}$
Length, Flanged Valves, inches . . . . .	....	....	....	....	....	$7\frac{7}{8}$	$7\frac{7}{8}$	$9\frac{1}{4}$	$10\frac{3}{4}$
Size, inches		4	$4\frac{1}{2}$	5	6	7	8	10	12
Each		35.00	40.00	45.00	55.00	65.00	75.00	90.00	130.00
Length, Screwed Valves, inches		$10\frac{3}{4}$	12	12	13	....	....	....	....
Length, Flanged Valves, inches		$10\frac{3}{4}$	12	12	13	14	$16\frac{3}{4}$	$18\frac{1}{2}$	22

The Nason Balanced Governor Valve

It will be noted that this valve is of the double piston disc type, in which the openings are identical in diameter—thereby supplying a valve which is balanced at all points of its stroke.

These valves are ordinarily operated by some force applied to the lever, and are used largely as a water inlet valve on feed water heaters, being operated by a float in the heater.

They are also adapted for any automatic regulating device or appliance where a quick-opening valve is required which is absolutely balanced and moves with a minimum of friction.

For conditions calling for a valve of this type without yoke and lever attachment, the valve is made with plain spindle as shown in Fig. 1852.

These valves will handle steam, air, gas, water and other fluids, but this construction is best adapted for service where a slight leakage is not objectionable, and preferably with steam or fluids free from gritty substances liable to abrade the piston surfaces. Where this condition is encountered, a strainer similar to Fig. 2013 should be used. All valves are tested under 125 pounds steam pressure before leaving factory. Made with screwed ends only.

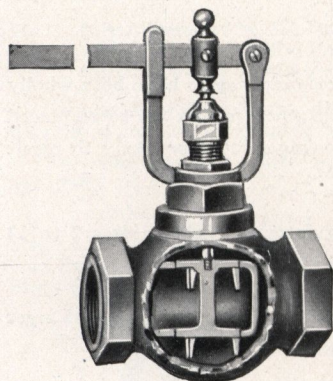


Fig. 1851. With Yoke

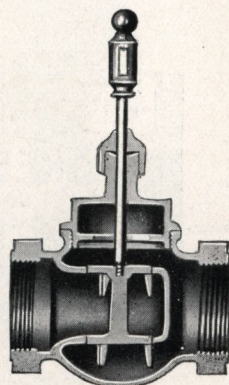


Fig. 1852
With Plain Spindle

Balanced Governor Valves

With or Without Yoke and Lever

Size	¾	1	1¼	1½	2	2½	3	3½	4
Face to Face	2¾	3¼	4	4⅝	6½	6½	7¾	9¾	11
Center of Valve to Top of Stem	5¾	6½	7⅛	7¼	7⅞	8⅞	9⅜		
Steam Metal, each	5.50	5.80	7.50	9.50	14.00	18.50	30.50	53.50	70.00
Iron Body, each								37.00	47.00

Water Pressure Regulators

Cold Water Type

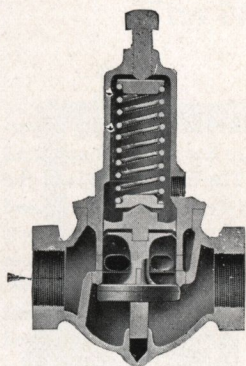


Fig. 1860
Cold Water Type

Is built in sizes $\frac{3}{4}$ inch to 3 inch in composition metal. Is of Single Seat Balanced construction, spring actuated and therefore holds the reduced pressure constant without regard to initial pressure variations. It is adaptable to general cold water service. An ideal type of valve for country residence work—containing but two wearing parts (leather and disc) which are both easily renewed, and requiring no attention or adjustment—a standard reliable valve with a nineteen-year record of highly satisfactory service.

Hot Water Type

This pattern can be used on hot or cold water where the initial pressure is constant, as in office or hotel buildings supplied by roof tank pressure, and where a normal service pressure is required on the lower floors. Has no opening for a leak to the atmosphere. A great number of valves of this type have been installed in the largest and best buildings of this country. They are dependable in operation and safe to install. One wearing part only, the removable seat disc. Made in sizes $\frac{3}{4}$ inch to 3 inch. All composition metal.

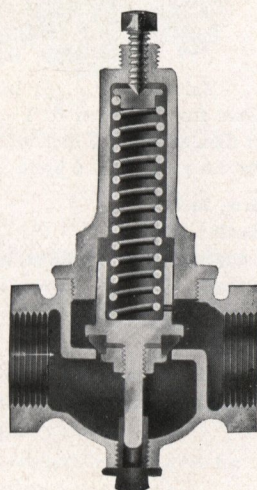


Fig. 1861
Hot Water Type

Price List, Figs. 1860 and 1861

Size.....	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Each.....	14.00	18.00	22.00	25.00	35.00	45.00	75.00

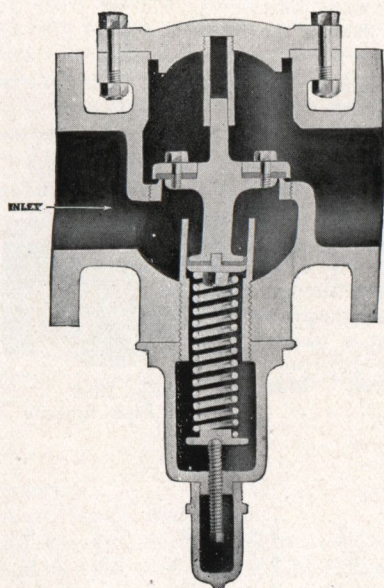


Fig. 1862
Fire Line Type

Fire Line Type

It will be observed that in this group of valves diaphragms have been wholly eliminated. This feature is particularly desirable where valves are to be placed in the intermediate floors of buildings, where leakage would be likely to result in property loss.

The Fire Line type of Water Pressure Regulator is made in sizes 2 to 12 inch, and for cold water only.

Sizes 2 to 3 inch inclusive are of composition metal throughout. Larger sizes, iron body with extra heavy diameter flanges.

This is the only Reducing Valve on the market without Pilot Valve arrangement that gives a full valve opening on a drop in pressure of five pounds or less on the delivery side—insuring at all times the greatest possible volume discharge.

Price List, Fig. 1862

Size.....	2	$2\frac{1}{2}$	3	4	5	6	8	10	12
Each.....	45.00	60.00	75.00	100.00	130.00	165.00	225.00	315.00	425.00

Water Pressure Regulators

Our Fig. 1870 Water Pressure Regulator is designed for the most exacting conditions, and will reduce pressures as high as 200 pounds to any lower pressure desired and maintain the reduced pressure without variation, regardless of any fluctuation in the outside pressure. Construction is such that the possibility of clogging is wholly eliminated. All metal working parts are of bronze composition and practically indestructible. The diaphragms employed are of the highest grade obtainable and have a continuous service record of twenty years.

The valve is extremely simple in design, as easily installed as an ordinary globe valve, and can be changed instantly to deliver any pressure desired by a turn of the top or control wheel.

The material and workmanship cannot be excelled, and, as a matter of fact, this valve is offered as a machine unapproachable in design and construction and practically imperishable in all its working parts.

The reduction of high water pressures through the medium of a Pressure Regulator results in a considerable saving in water, obviates the annoying spattering in fixtures and the constant repairs to closet and fixture cocks—removing as well the disagreeable hum and hammer in pipes due to excessive pressure in the house system.

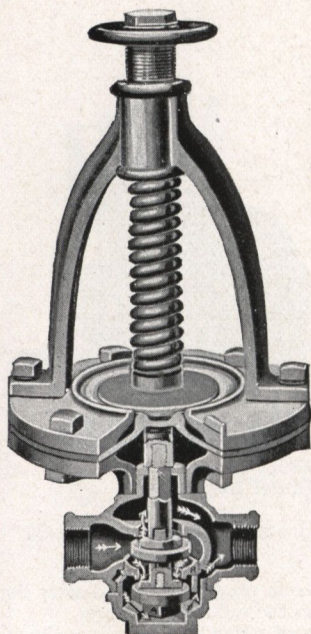


Fig. 1870
Water Pressure Regulator

Price List

Size, inches.....	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	6
Height over all, inches.....	14 1/2	14 1/2	15	15	15 1/2	17	17 1/2	24	29
Diam. Diaphragm, inches.....	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2
Face to Face, inches.....	4 3/4	4 3/4	5 1/2	5 1/2	6 1/2	7 1/2	10	11 3/4	15
Weight, pounds.....	18	18	21 1/2	21 1/2	27 3/4	34 3/4	57	110	200
Diameter Flanges, inches.....							7 1/2	9	11
Price, each.....	17.00	22.00	28.00	35.00	44.00	57.00	72.00	100.00	180.00

Mueller Reducing and Regulating Valve

Fig. 1871 is of the single seat construction and is made in all sizes from 1/4 inch to 2 inch inclusive.

This valve is designed for service on water, steam, air, gas, oil, etc. It is especially adapted for service on water where considerable reduction and close regulation are required, and for steam heating systems for any pressure as low as 5 pounds vacuum.

The smaller sizes of these regulators are largely used on oxygen, acetylene and kindred gases for welding, cutting, lighting and other purposes, and for such service they are made with smaller seats from Manganese bronze, nickel, rubber, celluloid, or other material that will best withstand each kind of gas. These regulators are carried in stock for both cold water and steam for the following pressure conditions:

- No. 1, Initial Pressure to 300 Pounds—Delivery Pressure 5 to 25 Pounds.
- No. 2, Initial Pressure to 300 Pounds—Delivery Pressure 20 to 50 Pounds.
- No. 3, Initial Pressure to 300 Pounds—Delivery Pressure 35 to 75 Pounds.

Regulators of this type for delivery pressure as low as 2 pounds below atmosphere or as high as 125 pounds, will be finished without extra charge.

For ordinary cold water service we will furnish No. 3 if pressure is not specified.



Fig. 1871
Mueller Reducing Valve

Price List

Size.....	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Iron Body.....	7.50	7.50	8.00	8.50	13.30	21.75	27.50	39.90
Brass Body.....	13.90	13.90	14.80	15.70	21.30	34.80	44.00	63.90

Trojan Water Pressure Regulator

Fig. 1872 Trojan Water Pressure Regulator is one of the best of the standard competition class. It is of small and compact construction and is widely used under all general conditions calling for the reduction of nominally high pressures of 150 to 160 pounds to any lower pressure required for domestic purposes, etc. The construction of the Trojan regulator permits of its installation in any position, and any change in delivery pressure is easily obtained by means of the control key at top.

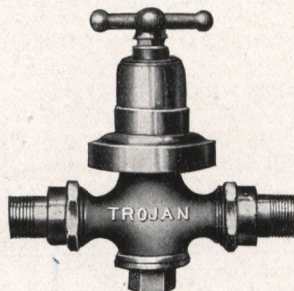


Fig. 1872. Trojan Regulator

Size.....	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
Fig. 1872 with Couplings....	7.00	10.00	14.00	20.00	.....	.....	.....	.....
Screwed, or Flanged.....	.....	.....	.....	.....	24.00	45.00	60.00	85.00

Larger sizes with bell connections quoted on application.

Davis Pressure Regulators

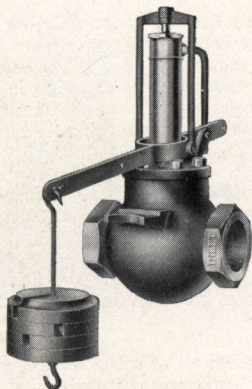
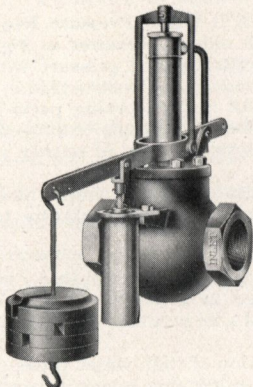
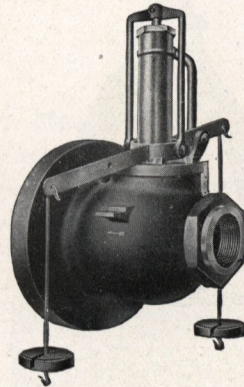
Fig. 1880. No. 1
Pressure RegulatorFig. 1881. No. 2
Pressure RegulatorFig. 1882. No. 3
Expanded Outlet Regulator

Fig. 1880, No. 1 Regulator

The No. 1 Regulator does not have a dash pot, although it has a lug on the body so one may be attached after the valve is installed if found necessary. This type should be used where there is no pulsation in the reduced pressure.

Standard No. 1 Regulators, as well as the Nos. 2 and 3, are constructed for the reduction of steam at any delivery pressure less than 40 pounds.

When a higher delivery pressure is required, a cylinder of smaller diameter and a longer lever is used, so the reduction may be attained without excessive weighting.

Always specify the initial and delivery pressures, so a valve of proper construction may be furnished.

Fig. 1881, No. 2 Regulator

The No. 2 Regulator has an oil dash pot, which effectively prevents the lever from jumping when there is a pulsation in the delivery pressure. This type should always be used for the reduction of water pressure. Regulators for air or water reduction are made up special for this particular service. Standard Steam Valves should not be used under either air or water pressure, as excessive leakage will follow.

Regulators $\frac{1}{2}$ to $1\frac{1}{2}$ inch inclusive, have screwed ends only. Sizes 2 to 6 inch inclusive, have either screwed or flanged ends. Sizes 7 inch and larger have flanged ends only. Screwed valves will be furnished in sizes 6 inches and smaller unless ordered otherwise.

Regulators, Figs. 1880 and 1881, Nos. 1 and 2

Size, inches	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$
Face to Face, Screwed, inches	$3\frac{1}{4}$	$3\frac{1}{4}$	4	$4\frac{1}{2}$	$6\frac{1}{4}$	$7\frac{7}{8}$	$7\frac{7}{8}$	$9\frac{1}{4}$	$10\frac{3}{4}$
Face to Face, Flanged, inches						$7\frac{7}{8}$	$7\frac{7}{8}$	$9\frac{1}{4}$	$10\frac{3}{4}$
Center of Pipe to Top, inches	$7\frac{1}{4}$	$7\frac{1}{4}$	$7\frac{1}{2}$	8	$10\frac{1}{2}$	13	$13\frac{1}{2}$	14	$14\frac{1}{4}$
Approximate Weight, pounds	20	20	20	20	30	55	65	100	110
Fig. 1880, each	20.00	20.00	22.00	24.00	25.00	30.00	35.00	40.00	50.00
Fig. 1881, each	24.00	24.00	26.00	28.00	30.00	35.00	40.00	46.00	56.00

Size, inches	4	5	6	7	8	10	12	14
Face to Face, Screwed, inches	$10\frac{3}{4}$	12	13					
Face to Face, Flanged, inches	$10\frac{3}{4}$	12	13	14	$16\frac{3}{4}$	$18\frac{1}{2}$	22	$24\frac{1}{4}$
Center of Pipe to Top, inches	$14\frac{1}{2}$	$18\frac{1}{2}$	$19\frac{1}{2}$	$20\frac{1}{2}$	$24\frac{1}{2}$	$26\frac{1}{2}$	29	33
Approximate Weight, pounds	115	180	250	300	375	500	800	1100
Fig. 1880, each	60.00	75.00	100.00	135.00	175.00	275.00	400.00	500.00
Fig. 1881, each	68.00	85.00	111.00	146.00	187.00	288.00	414.00	516.00

Fig. 1882, No. 3 Regulator

The No. 3 Regulator is constructed the same as the No. 1, the only difference being in the shape of the body. It has an expanded outlet, and is used extensively in steam heating where a heating main larger than the high pressure pipe is required. It will deliver a large volume of steam at a low velocity.

A dash pot is not furnished with this type of regulator. It has a lug on the body, however, so one may be attached if necessary.

Sizes $1\frac{1}{2}$ x3 to 2x4 have screwed ends only.

Sizes $2\frac{1}{2}$ x5 to 3x6 have inlet screwed and outlet flanged.

Sizes $3\frac{1}{2}$ x7 and larger have inlet and outlet flanged only.

Fig. 1882, Regulator No. 3

Size Inlet	$1\frac{1}{2}$	2	2	$2\frac{1}{2}$	3	3	$3\frac{1}{2}$	4	4	4	5
Size Outlet	3	3	4	5	5	6	7	6	7	8	8
Each	40.00	45.00	50.00	65.00	75.00	85.00	100.00	110.00	125.00	135.00	155.00

Size Inlet	5	5	6	6	6	8	8	8	10	10
Size Outlet	9	10	8	10	12	10	14	16	16	20
Each	175.00	195.00	220.00	250.00	280.00	325.00	360.00	400.00	450.00	500.00

Detailed dimensions on application.

Pressure Regulating Valves

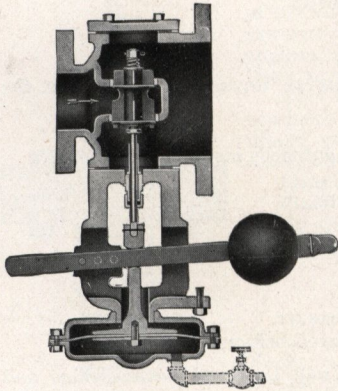


Fig. 1890
"Special 98" Vacuum Pressure
Regulating Valve

Fig. 1890. The independent diaphragm feature makes this valve desirable for use in connection with vacuum or vapor heating systems, or any other service where close regulation is of importance. They are not, however, suitable for reducing pressures against a dead end. For such service a single seated valve is used. List prices same as below.

Standard valves for pressures to 125 pounds. Extra Heavy, to 150 pounds. Delivery pressure, 0 to 10 pounds.

Fig. 1891. For use with ordinary low pressure heating systems, such as central heating plant work, blower installations, dry kilns, etc., where it is necessary to carry from 1 to 15 pounds on the delivery or supply mains. Not suitable for reducing against dead end service.

Standard, for pressures to 125 pounds. Extra Heavy, to 150 pounds. Delivery, 1 to 15 pounds.

Figs. 1890-91. Size 1x2 screwed only; 1½x2½ to 2x4 inclusive, small end screwed, large end flanged; all other sizes flanged both ends.

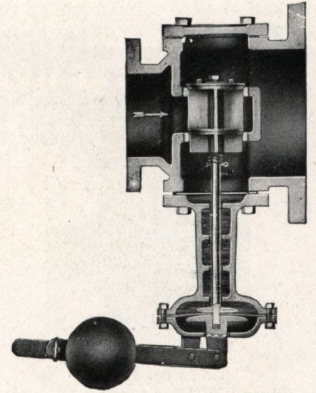


Fig. 1891
"Eureka" Low Pressure
Regulating Valve

Straight Sizes, Figs. 1890 and 1891

Size.....	¾	1	1¼	1½	2	2½	3	3½	4	5	6	7	8	10	12
Each.....	20.00	22.00	28.00	35.00	44.00	57.00	72.00	85.00	100.00	135.00	180.00	225.00	275.00	350.00	470.00

Increased Outlet Pattern—Figs. 1890 and 1891

Size.....	1x2	1¼x2½	1½x3	2x4	2½x5	3x6	4x6	4x8	5x10	6x12	8x14	8x16
Each.....	33.00	42.50	53.50	72.00	96.00	126.00	140.00	187.50	242.00	325.00	400.00	500.00

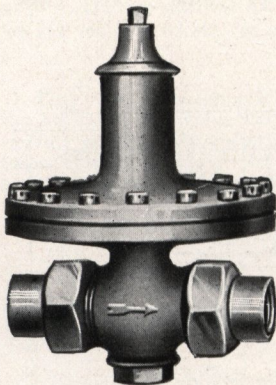


Fig. 1892
Special Bronze Reducing
Valve

Special Bronze Reducing Valves

For High Initial Pressures

This valve is made entirely of bronze and can be furnished in sizes from ⅛ inch to ¾ inch inclusive.

It is designed and adapted for reducing air or gas pressure from an initial pressure up to 3,000 pounds to any reduced or low pressure between 1 and 200 pounds. The diaphragm used is of large area, so that slight changes in the low pressure will open or close the main valve, permitting instant readjustment to the proper position to supply the exact volume required to maintain the constant low pressure for which the valve is set.

Especially adapted for small systems where a valve is required to shut tight to prevent the low pressure from building up.

Special Bronze Reducing Valve

Size.....	⅛	¼	⅜	½	¾
Each.....	12.00	12.00	12.00	12.00	15.00

Air Pressure Regulator

This valve is made in one size only, ¼-inch inlet and outlet, 5½ inches high. It is furnished with bracket to attach to wall, where required.

Stock valves are equipped with rubber diaphragm and will reduce pressures as high as 60 pounds to any lower pressure to 10 pounds.

For higher initial pressures than 60 pounds a Phosphor Bronze diaphragm is used. With this modification the valve will reduce pressures as high as 200 pounds to any lower pressure to 15 pounds. This valve will not handle fluids, being especially designed for air and gases.

In ordering, describe service and pressure conditions.

Size, ¼-inch pipe thread inlet and outlet.....Each 4.50

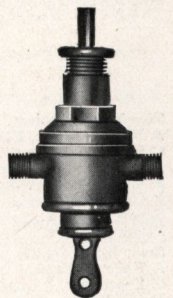


Fig. 1893
Air Pressure
Regulator

Class “W” Pressure Regulator for General Service

Standard for Working Pressure of 125 Pounds and Under

Delivery Pressure 15 Pounds and Up to 125 Pounds

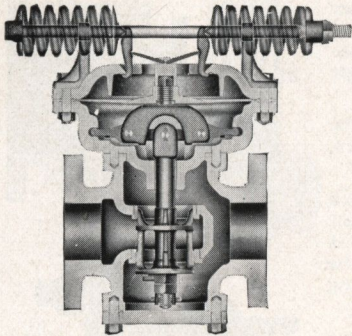


Fig. 1900
Class “W” for General Service
(Size 2½ to 6 inch inclusive)

Features

- A full compensating spring movement, exerting an unvarying pressure on the diaphragm.
- Renewable seat rings. Ample steam capacity.
- Drop forge stem, levers, toggle levers (case hardened) insuring durability.
- Great simplicity of construction and operation.
- Small movement of diaphragm—insuring long life.
- No friction of parts—note illustration.
- No small ports to clog.
- No dash pot.
- Noiseless—no chatter.
- Absolutely automatic after adjustment as to pressure.
- Every regulator carefully tested at pressure ordered before leaving factory.

Note: Where no pressures are stated, valve will be fitted with springs and diaphragms for delivering between 10 and 60 pounds pressure.

Class “W” for Working Pressures of 125 Pounds and Under

Size, inches.....	½	¾	1	1¼	1½	2	2½	3	3½	4	4½
Diameter Flanges.....	3½	3¾	4	4½	5	6	7	7½	8½	9	9½
Face to Face, Flanged.....	6	5	5¾	5½	6	7½	9	10	11	12	14
Face to Face, Screwed.....	3	4¼	4½	5¼	5¼	6½	7½	8¾	10½	11½	12½
Approximate Weight Complete, Screwed.....	4½	12½	14	22	27	49	76	81	94	151	165
Approximate Weight Complete, Flanged.....	10	14	17	25	33	59	86	96	112	174	197
Screwed, each.....	18.00	20.00	22.00	28.00	35.00	44.00	57.00	72.00	90.00	100.00	120.00
Flanged, each.....	20.00	22.00	24.00	30.00	37.00	46.00	60.00	75.00	95.00	105.00	125.00

Size, inches.....	5	6	7	8	9	10	12	14	16	18
Diameter Flanges.....	10	11	12½	13½	15	16	19	21	23½	25
Face to Face, Flanged.....	15	17	18½	20¾	23½	23½	27¼	32	35	37½
Face to Face, Screwed.....	14¼	14½	.....	.....	.....	.....	.....	.....	.....	.....
Approximate Weight Complete, Screwed.....	190	279	.....	.....	.....	.....	.....	.....	.....	.....
Approximate Weight Complete, Flanged.....	206	290	.....	.....	.....	.....	.....	.....	.....	.....
Screwed, each.....	135.00	180.00	.....	.....	.....	.....	.....	.....	.....	.....
Flanged, each.....	140.00	185.00	220.00	260.00	325.00	350.00	450.00	575.00	700.00	875.00

Class “W” Pressure Regulator

Extra Heavy Standard

Initial Working Pressures 125 to 250 Pounds

Delivery Pressure 15 Pounds and Up to 125 Pounds

Flanges of different sizes and construction from those in table made to order only at extra price.

Companion flanges faced, drilled and bolted on to Regulator, furnished when so ordered.

For Delivery Pressures 150 pounds and up, valves furnished at special prices.

Note: Where no pressures are stated, valve will be fitted with springs and diaphragms for delivering between 10 and 60 pounds pressure.

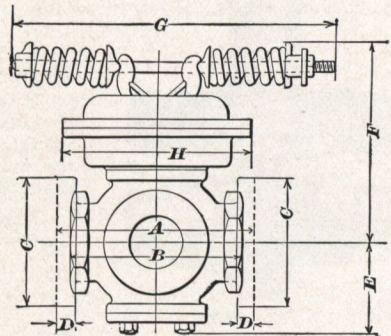


Fig. 1901
Class “W” for High Pressures

Class “W” for Initial Working Pressures of 125 to 250 Pounds

Size Valve, inches.....	½	¾	1	1¼	1½	2	2½	3	3½	4	4½
A Face to Face, Flanged Ends.....	6	5	5¾	5½	6	7½	9	10	11½	12½	14
C Diameter, Flanges.....	3½	3¾	4	4½	5	6	6½	7½	8½	9	10½
D Thickness, Flanges.....	1½	1½	1½	1½	1½	1½	1½	1½	1½	1½	1½
E Center to Bottom.....	1½	2½	2½	3½	3½	4½	4½	5	5½	6½	6½
F Center to Top.....	4½	5½	5½	6¾	7	9	10½	10½	11	12	12
Screwed, each.....	18.00	20.00	22.00	28.00	35.00	44.00	57.00	72.00	90.00	100.00	120.00
Flanged, each.....	20.00	22.00	24.00	30.00	37.00	46.00	60.00	75.00	95.00	105.00	125.00

Size Valve, inches.....	5	6	7	8	9	10	12	14	16	18	20
A Face to Face, Flanged Ends.....	15	17	18½	20¾	23½	23½	27¼	32	35	37½	48½
C Diameter, Flanges.....	11	12½	14	15	16	17½	20	22½	25	27	29½
D Thickness, Flanges.....	1½	1½	1½	1½	1½	1½	1½	1½	1½	1½	1½
E Center to Bottom.....	6¾	7½	9¼	9¼	10½	10½	12¼	14½	16	16¾	21
F Center to Top.....	12½	13½	14	14½	15	15	16½	22	23	23¾	26
Screwed, each.....	135.00	180.00	.....	.....	.....	.....	.....	.....	.....	.....	.....
Flanged, each.....	140.00	185.00	220.00	260.00	325.00	350.00	450.00	575.00	700.00	875.00	1150.00

Mason Reducing Valves

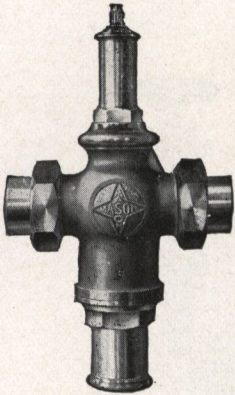


Fig. 1910
Reducing Valve

This valve reduces and maintains an even pressure of steam or air regardless of the variation of the initial pressure or of the volume of steam or air required. It automatically reduces boiler pressure for steam-heating systems of all types (vacuum systems included), central heating plants, engines, paper machines, slashers, dye kettles, and all situations where it is desirable to use a lower pressure than that on the boiler.

This Reducing Valve permits the main valve to open to the full area of the pipe, the only condition being that the high or initial pressure must at all times be not less than ten or fifteen pounds above the required low, or reduced pressure, in order to provide the power necessary to operate the reducing valve.

Sizes 2 inch and smaller, All Bronze, with unions.

Sizes 2½ inch and larger, Iron Body, with Bronze wearing parts.

All Cast Iron bodies are flanged Extra Heavy Standard.

Always install diaphragms with beaded side up.

Reducing Valve—Union Ends

Size	½	¾	1	1¼	1½	2
Each	18.00	18.00	22.00	28.00	35.00	44.00
Center to Top of Key, inches	7½	7½	10	11	11¾	12
Center to Bottom, inches	4¾	4¾	5	6	7½	9½
Length over Unions, inches	5¾	5¾	7	8	9	11¼

Flanged Ends

Size	2½	3	3½	4	5	6	8	10
Each	57.00	72.00	85.00	100.00	135.00	180.00	250.00	350.00
Center to Top of Key, inches	12	14	14	15	15½	16½	17½	19½
Center to Bottom, inches	9½	10½	11½	13	13½	16	18½	21¼
Face to Face, Flanged	8¾	10¼	12	14	15½	17½	21	25¾
Diameter Flanges	7½	8¼	9	10	11	12½	15	17½

Note: All bronze valves are suitable for 300 pounds initial pressure and can be furnished with diaphragm springs for reduced pressures as follows: 5 to 50 pounds, 50 to 140 pounds, or 140 to 300 pounds. An extra charge is made for reduced pressures below 5 pounds. Sizes 2½ to 10 inches are suitable for 180 pounds initial pressure.

Large Diaphragm Pattern

This valve is designed for reduced pressure below 5 pounds. Its large diaphragm area renders the action of the valve very sensitive to the slightest change in the reduced pressure. It will operate without any variation of reduced pressure and will work equally well on reduced pressures below the atmosphere. It cannot be used satisfactorily for reduced pressures above 10 pounds, but will carry reduced pressures as low as desired, even under a vacuum.

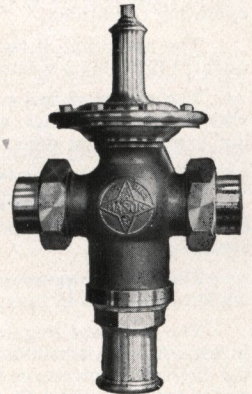


Fig. 1911
Large Diaphragm
Pattern

Large Diaphragm Pattern Reducing Valve

Size	½	¾	1	1¼	1½	2	2½
Each	30.00	30.00	35.00	37.50	44.00	53.50	68.70
Size	3	3½	4	5	6	8	10
Each	81.50	94.50	109.50	144.50	189.50	259.50	359.50

Dimensions same as above.



Fig. 1912
Differential Pattern

Differential Pattern

Designed for use on vacuum system of steam heating and wherever a large volume of steam is required at a low pressure from a high initial pressure.

The outlet of these valves has an area four times the area of the inlet, the main valve being the size of the inlet.

They are fitted with large diaphragms and will reduce below the atmosphere, and as high as 15 pounds.

Sizes ¾x1½ and 1x2, All Bronze, with union ends.

Sizes 1¼x2½, 1½x3 and 2x4, All Bronze, union inlet, flanged outlet.

Sizes 2½x5 and larger, Iron Body, Bronze lined, flanged on inlet and outlet.

Adjustable for reduced pressures from any pressure required by a vacuum heating system up to 15 pounds.

Differential Pattern

Size	¾x1½	1x2	1½x2½	1½x3	2x4	2½x5	3x6	3½x7	4x8	5x10	6x12
Each	26.00	32.00	39.00	48.00	61.00	76.00	89.00	104.00	139.00	185.00	255.00

Detailed dimensions on application.

Standard Pressure Regulator

For Steam and Air

For Pressures to 150 Pounds

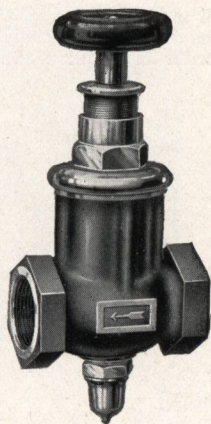
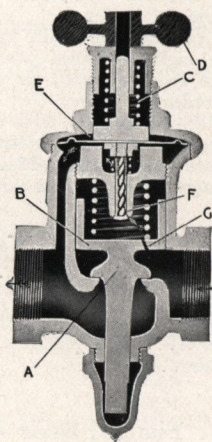
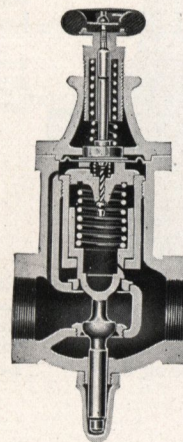


Fig. 1920. Standard Regulator



Section 1 $\frac{1}{4}$ and smaller



Section 1 $\frac{1}{2}$ and larger

The Standard Pressure Regulator is applicable for all conditions where it is desired to reduce a high initial steam or air pressure to a constant lower pressure.

It is a compact, self-contained device, about the size of an ordinary globe valve, having no external levers or weights. It has no glands or packings of any sort and if used for air the seats may be made of any soft material suitable for the operating conditions.

The operation of the valve is entirely automatic, with a further advantage of having no drips or drain pipes, consequently there is no waste of steam or air.

The bodies of the smaller sizes are made of special bronze steam metal composition, while the larger sizes are of iron with bronze mountings, and the workmanship is of the highest quality throughout. The diaphragms are of special bronze, and experience has shown that less than one-half of one per cent. of the diaphragms have failed in the past twenty years.

All parts are made to a standard gauge and are interchangeable.

Each regulator has a pressure range of from 1 to 150 pounds, but for high pressure work there should always be a differential of about 20 pounds between initial and delivery pressures. For lower pressures the differential would be correspondingly less.

The delivery pressure can be readily and instantly changed by varying the tension of the top spring; this being done while regulator is in operation.

The Standard Regulator briefly described is as follows: The main valve A is operated by the pressure acting on loose fitting piston B, which is a part of the valve. When the initial pressure of the steam or air is released, valve A is closed by the differential pressures on the piston. The delivery pressure is governed by the tension of top spring, C; this tension being varied by hand wheel D. The delivery pressure acts on diaphragm E from below, while a constant pressure is exerted from above by spring C. A variation in delivery pressure causes a movement of the diaphragm E, which operates the secondary valve F.

Operation: When steam enters regulator the valve A is raised to a position at which it will pass a sufficient quantity of steam to equalize the pressure on both sides of the diaphragm E, the pressure on one side being caused by the top spring, which in turn is counter-balanced by the delivery pressure. Should there be a reduction in delivery pressure, the top spring causes a downward movement of secondary valve F, relieving the pressure over piston B and allowing it to escape faster than it can enter through the port G, thus causing valve A to open wider until equilibrium is established on the diaphragm. While this condition is being established, the diaphragm is closing valve F, the valve being entirely closed when the pressures are equalized on both sides of the diaphragm. This position is maintained until there is another variation in delivery pressure, when the above described operation is repeated.

Sizes 1 $\frac{1}{4}$ inch and smaller, All Bronze. Sizes 1 $\frac{1}{2}$ inch and larger, Iron Body, Bronze Mounted.

Sizes 2 $\frac{1}{2}$ inch and smaller, screwed. Sizes 3 inches and larger, flanged.

The Standard Pressure Regulator

Sizes	$\frac{1}{2}$	$\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$	3	4
Face to Face	3 $\frac{7}{8}$	3 $\frac{7}{8}$	3 $\frac{7}{8}$	4 $\frac{1}{8}$	5 $\frac{1}{2}$	6 $\frac{1}{2}$	7 $\frac{1}{2}$	10	12
Diameter Flanges								8	9
Center Pipe to Bottom	2 $\frac{7}{8}$	2 $\frac{7}{8}$	2 $\frac{7}{8}$	3	4 $\frac{1}{2}$	4 $\frac{3}{4}$	5 $\frac{1}{2}$	6 $\frac{3}{4}$	8 $\frac{1}{4}$
Center Pipe to Top	7	7	7	7	10	11 $\frac{3}{4}$	12 $\frac{1}{2}$	16	18
Each	22.00	22.00	22.00	28.00	35.00	44.00	57.00	72.00	100.00

Lock-up Attachment 3.00 Extra, Net.

Improved Pressure Regulator for Steam

For Pressures to 250 Pounds

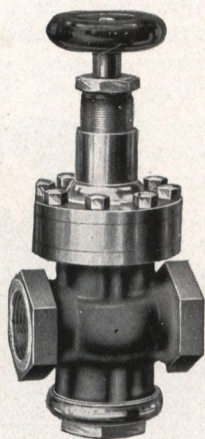
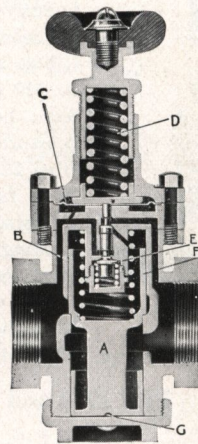


Fig. 1930
Improved Pressure Regulator



Section

The Improved Pressure Regulator is essentially the same in general principles as the Standard pattern shown in Fig. 1920 except that the operation is considerably more sensitive. In the Improved pattern, when the desired delivery pressure is reached, the valve closes and remains so until a reduction in delivery pressure takes place, when it instantly opens. This intermittent and instantaneous opening and closing of the valve eliminates the continuous scoring or cutting away of the valve seat and prolongs the life of the regulator.

It is used on steam-heating apparatus, slashers, jacket kettles, air and water pumps; on steamships for deck machinery, pumps, supplying steam to engines at lower than boiler pressure, or in any place where it is desired to reduce from a high pressure to a lower pressure. In pulp and paper mills, on digesters and on the dryers, it is highly recommended and can be used in connection with exhaust steam.

By its use, steam may be maintained in the boilers at a high pressure, sufficient to run a steam engine or elevator and yet be reduced for heating to two or three pounds, thereby entirely preventing the snapping and cracking in radiators and heating pipes which is so disagreeable and dangerous, also preventing the wear and cutting of the seats of the valves.

The Improved Regulator can be used for superheated steam service, for which it is made of steel with nickel bronze trimmings.

The pressure range is from 1 to 250 pounds, and it will regulate, maintaining uniformly and accurately any lower delivery pressure up to within a few pounds of the initial pressure. It can be used for exhaust and low pressure steam and its action is fully as satisfactory as under the higher pressures.

Because of its instantaneous action, it can be used for all services where there is a varying demand for steam and where a quick response of the valve is imperative.

The operation of the valve is as follows: Steam pressure on the inlet side of the regulator raises valve A, allowing steam to pass over to the delivery side. The port B transmits the delivery pressure to the under side of the diaphragm C; the counterbalancing pressure being exerted by the top spring D on the upper side of the valve. When the steam pressure on the under side of the diaphragm is decreased, the top spring, which governs the delivery pressure, causes the diaphragm to give way, opening the secondary valve E, allowing the steam to escape from the chamber on the upper side of piston F; at the same time port G is opened, admitting high pressure steam to the under side of the piston by a port not shown, thus instantly opening the main valve A to its extreme position. As soon as the delivery pressure reaches the desired point, the diaphragm is forced upward, closing the secondary valve and shutting off steam from the under side of the piston. The secondary valve being closed, the pressure of steam in the chamber above the piston increases and forces the piston downward, closing the main valve, which remains closed until a change in delivery pressure causes the above described operation to be repeated.

Sizes $1\frac{1}{4}$ inch and smaller, All Bronze. Sizes $1\frac{1}{2}$ inch and larger, Iron Body, Bronze mounted.
 Sizes, 2 inch and smaller, screwed. Sizes, $2\frac{1}{2}$ inch and larger, flanged.

The Improved Pressure Regulator

Sizes	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	4	5	6	7	8	10
Face to Face	$4\frac{1}{8}$	$4\frac{7}{8}$	$4\frac{3}{8}$	$6\frac{1}{4}$	$8\frac{3}{4}$	$10\frac{1}{2}$	$11\frac{3}{4}$	$12\frac{3}{4}$	$14\frac{7}{8}$	$16\frac{7}{8}$	$18\frac{1}{4}$	21
Diameter Flanges					$7\frac{1}{2}$	$8\frac{1}{4}$	10	11	$12\frac{1}{2}$	14	15	$17\frac{1}{2}$
Center Pipe to Bottom	$2\frac{5}{8}$	$2\frac{5}{8}$	$2\frac{3}{4}$	$3\frac{3}{4}$	$4\frac{1}{8}$	$4\frac{7}{8}$	$5\frac{1}{8}$	$5\frac{3}{4}$	$6\frac{1}{2}$	$7\frac{1}{2}$	$8\frac{3}{4}$	10
Center Pipe to Top	$7\frac{1}{8}$	$7\frac{7}{8}$	$7\frac{1}{4}$	$10\frac{1}{4}$	$11\frac{3}{8}$	$12\frac{1}{4}$	13	$13\frac{1}{2}$	$14\frac{3}{4}$	16	$19\frac{1}{2}$	$21\frac{1}{4}$
Each	22.00	28.00	35.00	44.00	57.00	72.00	100.00	135.00	180.00	210.00	250.00	350.00

Larger Sizes and Valves for Superheated Steam quoted on specification.

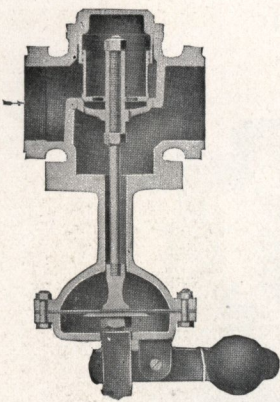


Fig. 1940. Low Pressure

desirable, at small extra charge. Fig. 1941 made in 1½ and larger sizes only.

Fig. 1940 is designed to deliver and maintain any reduced pressure from 1 to 15 pounds, inclusive, being particularly suited for use on steam heating systems where pressure reduction to a pressure below that of the boiler is required. The operation is noiseless, steady, and free from any pulsation of lever while in service. All stock valves up to 3 inches inclusive are screwed ends, unless otherwise ordered. Above 3 inches, flanged bodies are furnished. In ordering, specify initial pressure and the reduced pressure to be maintained.

Fig. 1941, High Pressure Type is tested to 200 pounds and is designed to reduce from boiler pressure, and on the low pressure side has a range of adjustment from 15 pounds up to the boiler pressure. Note full piston construction. No diaphragm, and no wearing part except the packing in the stuffing box. Piston construction is such that there is no possibility of the valve sticking while in operation. Furnished with expanded outlet, where

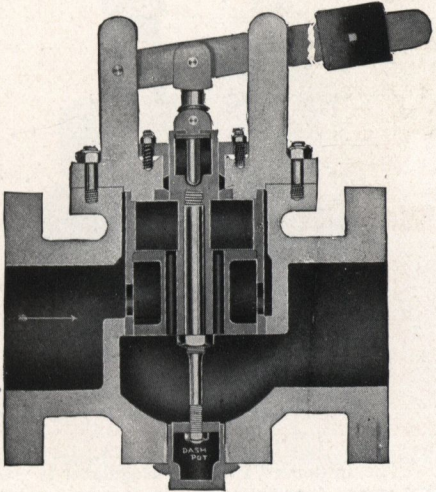


Fig. 1941. High Pressure

Fig. 1940 and Fig. 1941

		Screwed Pattern							
Size, inches		1	1½	2	2½	3			
Price List		22.00	28.00	35.00	57.00	72.00			
Size, inches		4	5	6	7	8	9	10	12
Price List		100.00	135.00	180.00	225.00	275.00	350.00	350.00	450.00
Diameter of Flanges, ins.		10	11	12½	14	15	17½	17½	20½
Thickness of Flanges, ins.		1¼	1¾	1 ⅞	1½	1¾	1¾	1¾	2
Face to Face, ins.		13½	15	17½	19	19	23	23	25

Range Boiler Safety Valve

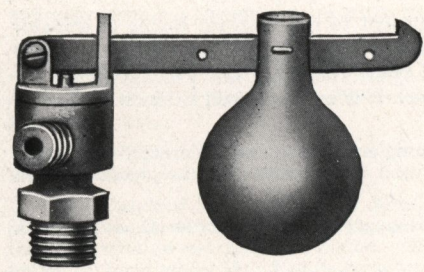


Fig. 1942. Range Boiler Safety Valve

This valve is designed especially for automatically relieving excess pressure in range boilers.

It is made in one size only, viz.: ½-inch male pipe thread inlet and ⅜-inch male pipe thread discharge outlet.

Lever is graduated and furnished with weight for a maximum relief of 100 pounds.

As this valve has no stuffing box on spindle, the discharge line should gravitate from the point of discharge.

As the size of the valve obviously imposes a correspondingly small valve area, it is better adapted for range boilers up to 40 gallons. With larger sizes a relief valve of the spring-loaded type, Fig. 1953 or 1954 should be used.

Range Boiler Valve, one size only, ½-inch inlet, ⅜-inch outlet, pipe thread Each..... 4.00

Water Relief Valve—Standard Pattern

This type of Relief Valve can be supplied with stock springs for any set pressure to 250 pounds. For higher pressures an additional charge is made. All sizes to 4 inch in brass, and 2 to 12 inch in iron. Pressure screw is protected by cap to prevent tampering.

Valves from 2 inch upward are made either with screwed or flanged bottom. If flange is desired, always state diameter in ordering. If flange is to be drilled, send template with order, otherwise standard flange, not drilled, will be furnished.

Always state pressure at which valve is to be set.

Brass Water Relief Valves

Size	1½-¾	1	1¼	1½	2	2½	3	3½	4
Each	10.00	12.00	15.00	18.00	27.00	43.00	72.00	95.00	120.00

Underwriter Iron Water Relief Valves—Wheel Top
Bronze Mounted

Size	2	2½	3	3½	4	5	6	8	10	12
Each	45.00	55.00	65.00	85.00	100.00	150.00	225.00	on application.		

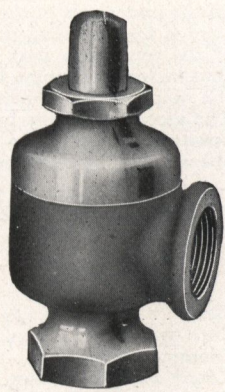


Fig. 1943
Brass Water Relief Valve

Water Relief Valves

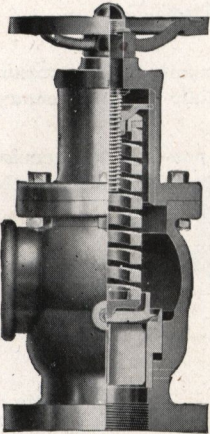


Fig. 1950
Water Relief Valve
Flanged Base
Screwed Outlet

These valves are designed for hydraulic elevators, waterworks, pumping stations and stand-pipes, and wherever an Automatic Relief Valve is wanted to prevent a water hammer or over-pressure of water.

They can also be furnished with special construction for fire pump service to pass underwriters' inspection. Where required for fire pump service, so specify in ordering.

Greatest efficiency and durability, combined with ease of adjustment, are the main points that have resulted in the wide adoption of this valve for the most exacting relief conditions.

As shown in sectional interior view, the valve is made of a large pattern, with extra long spring, giving large relief. It is furnished with large wheel-top for easy adjustment. Working parts are of high grade composition metal to prevent corrosion; the spring of Jessop steel.

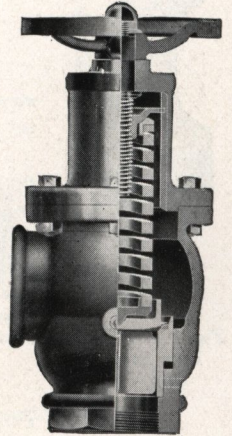


Fig. 1951
Water Relief Valve
Screwed Inlet
and Outlet

Water Relief Valves

Size.....	1½	2	2½	3	3½	4	4½	5	5½	6
Diameter, Inlet Flange.....	6	7	8	9	10	10	12	12	14	14
Diameter, Outlet Flange.....	5	5½	7	7½	8	8½	9	9½	10	10½
Extreme Height.....	12	14½	17½	19½	19¾	21¼	20	20¾	22¾	24¼
Face of Inlet to Center of Outlet, Flanged..	4¼	4¾	6¼	6¾	7¾	7¾	7¾	8¼	8¾	9
Face of Inlet to Center of Outlet, Screwed..	4¼	5½	6	6¾	7¾	7¾	7¾	8½	8½	9¼
Flanged or Screwed, each.....	30.00	40.00	60.00	75.00	80.00	85.00	105.00	125.00	140.00	150.00

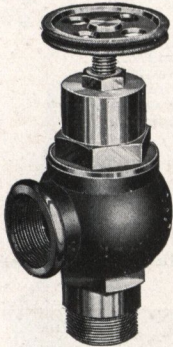


Fig. 1952
Water Relief
Valve

Water Relief Valves

Small Composition Patterns

This valve is adapted for the same service as the larger sizes listed above, and is also widely used on cold water storage tanks, and for all conditions calling for a quick-acting relief valve for cold water service, including pneumatic water systems. With male thread inlet as shown, this valve, and the relief valves listed below, can be furnished to relieve at any pressure up to 200 pounds. With female inlet, this group can be furnished for all pressures up to 400 pounds.

Hand-wheel permits easy adjustment within the limitation of the spring.

In ordering state pressure at which valve is to relieve.

Water Relief Valves

Size.....	⅛	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Each.....	5.00	5.00	5.50	5.50	7.00	9.00	12.50	16.50	23.00	40.00	65.00

Snifting Relief and Cylinder Relief Valves

Fig. 1953 Snifting Relief Valve is used in a variety of services, and is especially designed for range boilers and hot water tanks to take care of excess pressure due to expansion of water under high temperatures. Also used on cylinders, condensers and for any condition where a quick-working relief valve is required to relieve high temperature hot water pressures.

Has cap over pressure screw to prevent tampering.

Fig. 1954 Cylinder Relief Valve of proper size applied to each end of a steam engine cylinder insures perfect safety from blowing out of cylinder heads due to accumulation of water in the cylinder. Provided with wheel top, so that the set pressure may be changed as desired. Also adapted for same conditions as Fig. 1953.

Both valves are composition metal, with Jessop's steel springs.

Snifting Relief and Cylinder Relief Valves

Size.....	⅛	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Fig. 1953.....	5.00	5.00	5.50	5.50	7.00	9.00	12.50	16.50	23.00	40.00	65.00
Fig. 1954.....	5.00	5.00	5.50	5.50	7.00	9.00	12.50	16.50	23.00	40.00	65.00

Always state pressure at which valves are to be set.

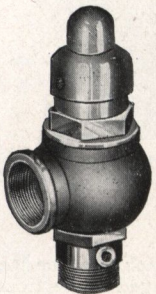


Fig. 1953
Snifting Relief
Valve



Fig. 1954
Cylinder Relief
Valve



Fig. 1960. Nason
Low Pressure
Pop Valve

Nason Low Pressure Pop Safety Valve

Fig. 1960 introduces our special spring type Pop Valve, which is designed particularly for low pressure steam house heating boilers. The valve is equipped with trip lever, and is carefully tested at factory, set and sealed at 15 pounds.

The Nason Pop Valve is strictly high grade construction throughout. It possesses the genuine "popping" feature and is not to be classed with the cheap and unreliable so-called Pop Valves of the competition quality.

All sizes are made of brass, highly finished.

Size.....	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Brass Finish.....	10.00	12.00	15.00	20.00	30.00	50.00	65.00
Nickel-plated.....	12.00	14.00	17.00	23.50	35.00	57.00	75.00

Pop Safety Valves—Ring Lever Pattern

Sizes $\frac{1}{8}$ and larger, female thread; larger, male thread

These valves are compact in form and solidly constructed for high pressure service, insuring continuous dependability. Each valve is carefully tested and set to operate at the desired pressure, which should always be stated in ordering. Can be furnished for pressures up to 400 pounds. Especially adapted for steam vehicles.

Size.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$
Figs. 1961-1962, each.....	4.50	4.50	5.00	5.00	6.00

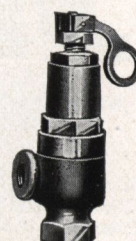
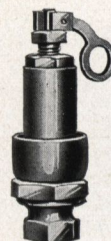


Fig. 1961 Fig. 1962. With
Open Discharge Pipe Outlet

Ammonia Relief Valve

Approved Massachusetts Standard

Requirements of Massachusetts Board of Boiler Rules:

The minimum size of Relief Valves used on ammonia compressors shall be as follows:

$\frac{1}{8}$ -inch valve based on 120 cubic feet displacement per minute.
$\frac{3}{4}$ -inch valve based on 280 cubic feet displacement per minute.
1-inch valve based on 510 cubic feet displacement per minute.
$1\frac{1}{4}$ -inch valve based on 830 cubic feet displacement per minute.
$1\frac{1}{2}$ -inch valve based on 1200 cubic feet displacement per minute.
2-inch valve based on 2,120 cubic feet displacement per minute.

The discharge outlets of Relief Valves must be threaded or flanged for pipe connections as follows:

$\frac{1}{8}$ -inch valve with 1-inch pipe outlet.
$\frac{3}{4}$ -inch valve with $1\frac{1}{4}$ -inch pipe outlet.
1-inch valve with $1\frac{1}{2}$ -inch pipe outlet.
$1\frac{1}{4}$ -inch valve with 2-inch pipe outlet.
$1\frac{1}{2}$ -inch valve with $2\frac{1}{2}$ -inch pipe outlet.
2-inch valve with 3-inch pipe outlet.

All Relief Valves are tested and set to open at 250 pounds pressure with full lift of at least one-sixth their diameter at maximum pressure of 275 pounds.

Ammonia Relief Valves

Size.....	$\frac{1}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Each.....	25.00	30.00	37.00	45.00	55.00	65.00

Approved Massachusetts Diffuser

For use in connection with approved Ammonia Relief Valves.

Applied in a vertical position at the end of the discharge pipe from the relief valve on all applications where the ammonia is discharged into the atmosphere through a pipe other than a ventilating stack. Positively prevents the discharge of an undiluted column of gas into the atmosphere.

Diffusers

Size Diffuser, inches.....	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
For Valve size, inches.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Diffusers, each.....	8.00	15.00	15.00	25.00	25.00	45.00

Diffusers have bottom inlet connections same size as outlet connection of relief valve with which they are used.

All Iron Ammonia Relief Valves—Straight Sizes

For conditions where the Massachusetts Standard Expanded Outlet Valve is not required, we can furnish our standard straight size construction set for any pressure to 500 lbs., with female screwed inlet and outlet or with flanged connections. Adapted for manufacturing and chemical plants. Will keep tight in continued service and will give prompt and efficient relief.

Size.....	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{4}$	3
Each.....	10.00	12.00	14.00	22.00	25.00	30.00	40.00	60.00	75.00

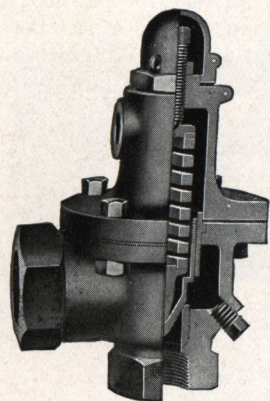


Fig. 1963
Ammonia Relief Valve

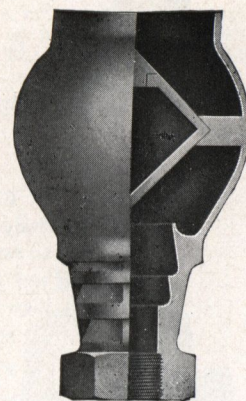


Fig. 1964
Diffuser

Pop Safety Valves

Open Discharge Pop Safety Valves
without Lever

With and Without Top Cap

Note: These valves can be furnished with fiber disc for compressed air service. Also lever patterns Fig. 1982 and Fig. 1983

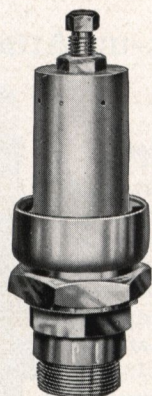


Fig. 1970
Pop Valve without Cap or Lever

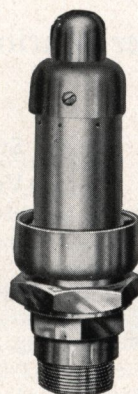


Fig. 1971
Pop Valve with Cap Only

Pop Safety Valves for Small Stationary and Portable Boilers

These valves are made of high-grade composition metal, and the springs of Jessop's steel. They give perfect relief, are solid in construction, and durable.

Fig. 1970 Valve has patented knife edge pop lip, encased spring, pivoted disc, and open discharge outlet.

Fig. 1971 Valve is similar, but is furnished with top cap to cover and protect pressure screw.

To change pressure on these valves, slack check nut and turn pressure screw down for increased pressure or upward for less pressure, then set up check nut. When it is desired to change set pressure more than 15 pounds above or below original set pressure, new springs should be ordered to obtain the greatest efficiency.

Size.....	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Fig. 1970, each.....	4.50	6.50	8.50	10.00	20.00	32.00	40.00
Fig. 1971, each.....	5.00	7.00	9.00	10.50	20.50	33.00	41.00

In ordering always state highest working pressure.

Lever Type Pop Safety Valves

Standard Pattern

Fig. 1972 with open discharge is designed for use on all stationary and portable engines and boilers. Also allowed for marine use on the basis of one square inch to three square feet of grate surface, and is made to comply with the Rules and Regulations of the United States Board of Supervising Inspectors of Steam Vessels. Furnished for marine use with beveled seats at an angle of 45 degrees. Made of best non-corrosive steam metal throughout.

Fig. 1973 with angle discharge for piping the escaping steam away from the boiler; can also be used for stationary work as well as marine, although especially adapted for use on yachts and steam launches, and is designed to meet the requirements of the United States Board of Supervising Inspectors.

In ordering, state pressure at which valve is to be set and whether for marine or stationary service.



Fig. 1972
Open Discharge

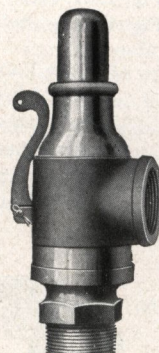


Fig. 1973
Angle Discharge

Fig. 1972, Lever Type Pop Safety Valves Open Discharge, without Lock-up Attachment

Size.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Each.....	8.00	8.00	10.00	12.00	15.00	23.00	38.00	65.00

Fig. 1972, Open Discharge with Lock-up Attachment

Size.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Each.....	9.00	9.00	11.00	13.00	17.00	25.00	40.00	68.00

Fig. 1973, Angle Discharge, without Lock-up Attachment

Size.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Each.....	10.00	10.00	12.00	15.00	18.00	27.00	43.00	72.00	95.00	120.00

Fig. 1973, Angle Discharge, with Lock-up Attachment

Size.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Each.....	11.00	11.00	13.00	16.00	20.00	29.00	46.00	75.00	98.00	123.00

Cam Lever Marine Pop Safety Valve with Lock-up Attachment

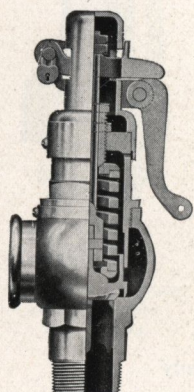


Fig. 1980
Yacht Valve

Adopted by the
United States Board of Supervising Inspectors of Steam
Vessels. Approved and Accepted by the
United States Navy Department

Fig. 1980 is made of composition metal, finely finished, in sizes from $\frac{3}{4}$ inch to $3\frac{1}{2}$ inches inclusive, and is recommended more especially for steam yachts. It has bevel seat, encased spring, cam lever lifting attachment, and fully complies with the rules and regulations of the United States Board of Supervising Inspectors of Steam Vessels. The valve has pipe outlet, so that the steam discharge may be carried outside boiler room.

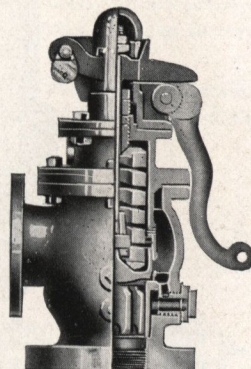


Fig. 1981
Marine Valve

Fig. 1981 is especially adapted for marine service on steamships, tow boats, steam yachts, etc., and is the standard valve on many of the large steamship lines. It is in use on several of the latest United States battleships, cruisers and gunboats, having been accepted by the Chief Engineer of the United States Navy.

Pop Safety Valves

Size.....	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	$5\frac{1}{2}$	6
Diam. Inlet Flange, Fig. 1981.....						8	9	10	10	12	12	14	14
Diam. Outlet Flange, Fig. 1981.....						7	$7\frac{1}{2}$	8	$8\frac{1}{2}$	9	$9\frac{1}{2}$	10	$10\frac{1}{2}$
Extreme Height, Fig. 1981.....						$17\frac{3}{4}$	$20\frac{1}{8}$	$21\frac{1}{4}$	$21\frac{5}{8}$	$23\frac{1}{8}$	$25\frac{1}{8}$	30	31
Face of Inlet to Center of Out- let, Fig. 1981.....						$6\frac{1}{4}$	$6\frac{3}{4}$	$7\frac{3}{4}$	$7\frac{3}{8}$	$7\frac{5}{8}$	$8\frac{1}{4}$	$8\frac{3}{4}$	9
Fig. 1981, each.....						38.00	48.00	66.00	75.00	84.00	95.00	102.00	125.00
Fig. 1980, each.....	7.20	9.60	12.00	14.40	25.00	40.00	55.00	70.00					

Marine Valve furnished with screwed inlet and outlet (to order only) at same price.

Yacht Valve furnished with flanged connections (to order only) at special price.

Unless otherwise stated, all marine Valves above 2-inch size are made with flanged inlet and outlet.

Testing clamps furnished at no extra expense for Iron Body Marine Valves.

Always state highest pressure carried, as every valve is tested and set before leaving our factory.

"Nickel Seated" Valves at prices same as above for Fig. 1980 Yacht Valve.

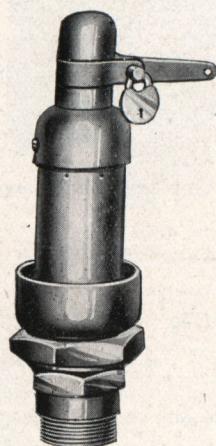


Fig. 1982
With Lock-up Lever
and Open Discharge

Lock-up Pop Safety Valves for Small Stationary and Portable Boilers

These valves are recommended for small size stationary or portable boilers. They are made throughout of the best composition metal, with the exception of the springs, which are of Jessop's steel; automatic in relief, durable and efficient.

Fig. 1982 Valve has lock-up attachment, trip lever, patented knife-edge pop lip, encased spring, pivoted discs and open discharge outlet.

Fig. 1983 Valve is the same as the Fig. 1982 Valve, but with the additional improvement of having pipe outlet.

Note: These valves can be furnished with fiber disc for compressed air service.

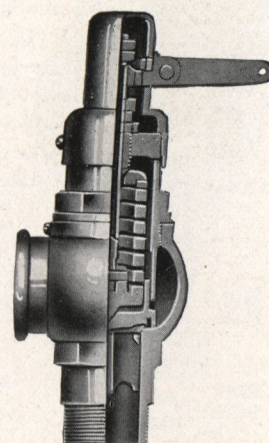


Fig. 1983
With Lock-up Lever
and Pipe Outlet

Lock-up Pop Safety Valves

Size.....	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Fig. 1982, each.....	6.00	8.00	10.00	12.00	22.00	34.00	48.00
Fig. 1983, each.....	7.00	9.00	11.00	14.00	25.00	40.00	50.00

Lock-up Pop Safety Valves

For Large Stationary and Portable Boilers

Features

Bevel seats at angle of 45 degrees and of highest grade composition steam metal. Nickel seats, extra quality, furnished when desired. Pop chamber with knife-edge pop lip, which wears evenly with valve seat. Encased spring chamber protecting spring from steam and forming upper guide for valve. Springs of Jessop's steel. Pivoted top and bottom discs for spring, to insure a true bearing on valve. Screw plug pop regulator to easily regulate pop from outside without taking valve apart. Compound adjustable cam lever, readily changed to stand in any desired position. Lock-up attachment to prevent tampering with adjustment. Working parts of valve entirely of high grade composition. Base outlet construction not necessitating removal of outlet pipe to grind in or repair valve. Testing clamp or "Gag" furnished, when specified, without extra charge.

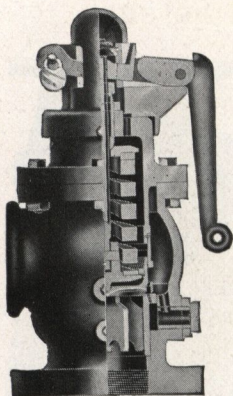


Fig. 1990
Flanged Base

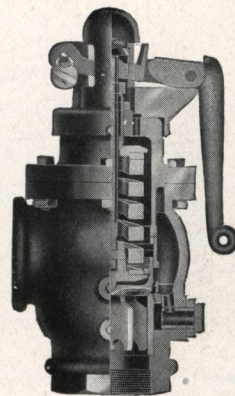


Fig. 1991
Screwed Base

Lock-up Pop Safety Valves

Size.....	2	2½	3	3½	4	4½	5	6
Diameter of Inlet Flange.....	7	8	9	10	10	12	12	14
Diameter of Outlet Flange.....	5½	7	7½	8	8½	9	9½	10½
Extreme Height.....	12½	15½	16¾	17½	17½	20	21¼	22
Face Inlet to Center of Outlet, Flanged.....	4⅞	6¼	6¾	7¾	7¾	7⅝	8¼	9
Face Inlet to Center of Outlet, Screwed.....	5⅞	6	6¾	7¾	7⅞	7⅞	8½	9¼
Center of Valve to Face of Outlet.....	3⅝	4¾	5¼	5¾	6	6¼	6⅝	7¼
Screwed or Flanged, each.....	30.00	40.00	55.00	64.00	70.00	80.00	85.00	125.00

In ordering, always state highest working pressure, and whether flanged or screwed Inlets are desired.

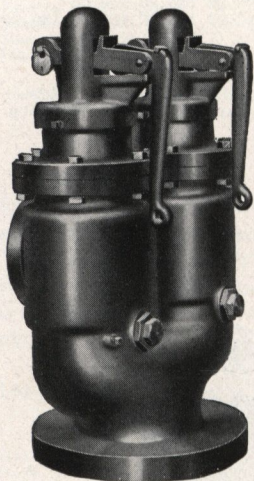


Fig. 1992
Twin Pop Valve

Twin Stationary Pop Safety Valves

It is becoming popular practice in large stationary boiler service, particularly in connection with water tube boilers, and where it is not feasible to apply one large valve, to equip boilers with valves made in the twin form, the two valves having a total area equal to that of the proper sized single valve. By this form of construction but one valve connection is necessary on the boiler, and with the valve parts made in one casting, and having one common discharge outlet, there is therefore but one outlet connection.

Valve shown is made with iron body and interior working parts similar to single construction illustrated above.

Twin Pop Valve

Size.....	2	2½	3	3½	4	4½	5	5½	6
Each.....	70.00	90.00	125.00	145.00	155.00	175.00	190.00	235.00	280.00
Diam. Inlet Flange..	8¼	9	10	12	14	15	15	16	17
Diam. Outlet Flange..	7½	8½	9	9	10	11	11½	11½	12

District Police Pop Safety Valves

Valve as shown in Fig. 1993 has full area under discharge outlet, preventing dust or dirt from getting into the interior working parts. It is made with long trip lever capable of raising the wing valve part off its seat one-fourth the diameter of the valve. The spindle is directly connected to the wing valve. The spring is of liberal length, of Jessop's steel and all working parts are of high grade composition metal. Adjustment furnished with standard lock to prevent tampering.

These valves when applied to heating boilers carrying a pressure of not over 15 pounds per square inch will permit the operation of the boilers without requiring a licensed engineer or fireman.

District Police Pop Valves

Size.....	2	2½	3	3½	4
Each.....	30.00	50.00	65.00	80.00	100.00
Maximum grate area allowable for each size Safety Valve, square feet.....	7.9	12.3	17.6	24	31.4

Boilers having over 31.4 square feet of grate area require two safety valves.

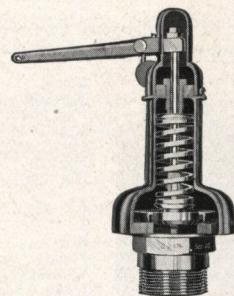


Fig. 1993
Police
Pop Safety Valve

Foot Valves and Strainers

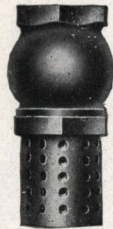


Fig. 2000
Foot Valve
Screwed

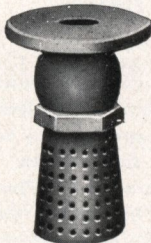


Fig. 2001
Foot Valve, Flanged

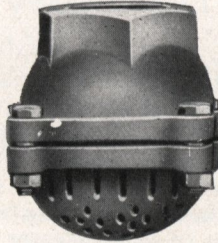


Fig. 2002
Foot Valve, Screwed

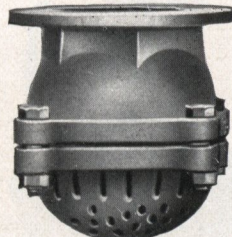


Fig. 2003
Foot Valve, Flanged

Foot Valves and Strainers

Size.....	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6	7	8	10
Fig. 2000, Black.....	1.15	1.30	1.40	1.90	2.40	3.30	3.90	5.60	7.30	10.50	11.25	14.75	35.00	41.00	64.00
Fig. 2000, Galvanized.....	1.75	1.95	2.10	2.85	3.60	4.95	5.85	8.40	10.95	15.75	16.90	22.15	52.50	61.50	96.00
Fig. 2000, Brass.....	1.50	2.00	2.75	3.75	5.50	12.00	16.00	.....	.....	.....	.....	.....	.....	.....	.....
Fig. 2001, Black.....	.....	.....	.....	.....	3.50	4.50	5.75	7.50	9.50	13.00	14.00	17.50	.....	45.00	70.00
Fig. 2001, Galvanized.....	.....	.....	.....	.....	5.25	6.75	8.65	11.25	14.25	19.50	21.00	26.25	.....	67.50	105.00

Figs. 2002 and 2003, Black

Size.....	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Fig. 2002.....	.42	.42	.44	.52	.65	.90	1.30	1.85	2.60	2.80
Fig. 2003.....	.....	.....	.....	.....	.....	2.10	2.50	3.25	3.60	.....
Size.....	4 1/2	5	6	7	8	10	12	14	15	16
Fig. 2002.....	4.00	4.25	7.00	16.00	16.00	29.00	58.00	118.00	132.00	.....
Fig. 2003.....	4.75	5.00	8.00	17.00	17.00	30.00	60.00	120.00	135.00	145.00

Figs. 2002 and 2003, Galvanized

Size.....	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Fig. 2002.....	.60	.60	.60	.75	1.00	1.45	2.00	2.70	3.90	4.25
Fig. 2003.....	.....	.....	.....	.....	.....	3.00	3.50	4.50	5.50	.....
Size.....	4 1/2	5	6	7	8	10	12	14	15	16
Fig. 2002.....	6.00	6.50	10.00	30.00	30.00	50.00	90.00	150.00	160.00	.....
Fig. 2003.....	7.25	7.50	12.00	32.00	32.00	52.00	95.00	155.00	165.00	180.00

Special Pattern Foot Valve

To Pass Through Well Pipes and Casings

In this pattern the strainer is threaded to fit the valve in such a manner as to leave the outside of uniform size, without any projecting flanges or bolts, and provides the largest size foot valve that will pass through any given size of well lining. The valve is metal with brass wings, leather faced.

Sizes—List Prices

Size, Pipe Thread.....	1 1/4	1 1/2	2	2 1/2	3	4
Outside Diameter, inches.....	2 3/8	2 5/8	2 7/8	3 3/4	4 1/2	5 3/4
Will go in Gas Pipe, inches.....	2 1/2	3	3	4	5	6
Will go in Well Casing, inches.....	2 1/2	2 3/4	3 1/4	4	4 3/4	6 1/4
Plain, each.....	2.10	2.25	2.70	3.15	4.10	7.20
Galvanized, each.....	2.70	3.15	3.60	4.10	5.00	9.00



Fig. 2004
Special
Pattern

Standard Cast Iron Strainers

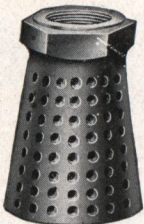


Fig. 2005. Screwed Strainer



Fig. 2007. Mushroom Strainer

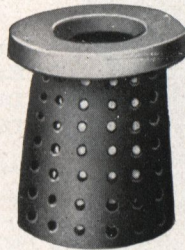


Fig. 2006. Flanged Strainer

Standard Cast Iron Strainers

Size.....	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6	8
Fig. 2005, Black.....	.40	.50	.75	1.00	1.50	2.00	3.00	3.75	4.50	4.75	6.50	15.00
Fig. 2005, Galvanized.....	.50	.75	1.00	1.50	2.00	3.00	4.50	6.00	6.50	7.00	10.00	22.00
Fig. 2006, Black.....	.....	.....	.....	.....	2.40	2.75	3.90	4.75	6.25	6.25	9.75	.....
Fig. 2006, Galvanized.....	.....	.....	.....	.....	3.50	4.00	5.25	7.00	9.00	9.00	14.00	.....
Fig. 2007, Black.....	.85	1.10	1.25	1.61	2.05	2.75	.....	5.00	10.00	11.00	17.32	18.22
Fig. 2007, Galvanized.....	1.00	1.35	1.50	2.00	2.50	3.40	.....	6.07	12.55	13.60	22.30	23.30

The "Holyoke" Strainer

These Strainers have an intake area more than four times that of the pipes for which they are designed.

Size.....	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	8	10	12
Height, inches.....	3 3/4	3 3/4	3 3/4	4	4	7	6 3/4	10	10	10	10 1/2	10 1/4	11 3/4	10 1/4
Diameter, inches.....	2 1/2	2 3/4	2 3/4	3 1/4	3 1/4	4 1/2	4 1/2	6 1/4	6 1/2	8 1/2	8 3/4	11	13 1/2	18
Plain, each.....	.18	.18	.23	.28	.44	.68	.85	1.40	1.40	3.20	3.60	6.50	12.00	20.00
Galvanized, each.....	.20	.20	.26	.32	.48	.80	1.00	1.65	1.65	3.50	4.00	8.00	14.00	25.00
Solid Brass, each.....	.45	.45	.70	.95	1.20	2.60	2.80	4.80	4.80	6.00	7.50	13.00	25.00	50.00

Sizes including 8-inch screwed, 10-inch screwed and flanged; 12-inch flanged only. Dimensions, 10-inch, flanged, 10 1/4 x 16 inches.



Fig. 2008
Holyoke
Strainer

Strainers for Steam, Gases and Fluids

Self-cleaning Strainer

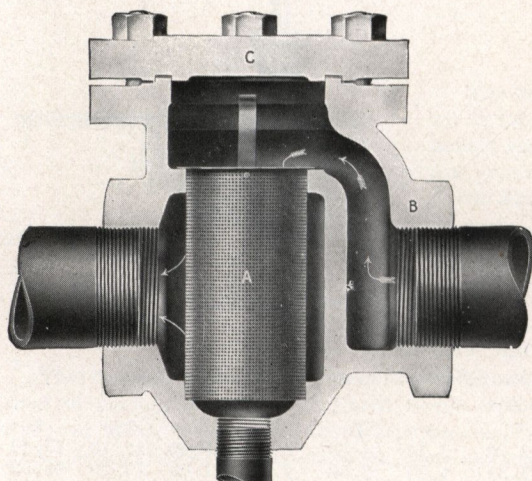


Fig. 2010. Self-cleaning Strainer

These strainers protect turbines, engines, pumps, steam traps, pressure regulators, pressure and vacuum heating systems, automatic air tools, blasts, meters, burners; in fact, wherever steam, air or gas is passed through pipe lines, they assure positive, continuous service.

Liquids lacking the expansive qualities of gases do not enable the thorough cleaning of the strainers by simply opening the blow-off, but much retarded matter can be discharged by frequent openings. An extra strainer is advisable for unusual conditions, and requires but a few minutes to exchange.

Regular strainers are suitable for 250 pounds steam or gas working pressure and 400 pounds liquid pressure.

For steam, air or gas service strainers are furnished with $\frac{1}{64}$ -inch perforations. When specified for liquid service, $\frac{3}{32}$ -inch perforations are supplied. Strainers are bronze and have area about three times that of the inlet or outlet.

Cylinders will be furnished to order with perforations as follows: $\frac{1}{64}$, $\frac{1}{32}$, $\frac{3}{64}$, $\frac{1}{16}$, $\frac{1}{8}$, $\frac{3}{16}$ and $\frac{1}{4}$ inch.

Self-cleaning Strainers

Size	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6	8	10	12
Screwed	5.00	5.00	5.50	6.50	9.00	10.00	16.00	23.50	26.00	39.00	46.00	73.00	86.00	110.00	230.00	390.00	560.00
Flanged							23.50	31.00	39.00	49.00	56.00	86.00	100.00	122.00	252.00	426.00	600.00
Extra Strainers	1.10	1.10	1.10	1.40	1.60	2.00	2.40	3.40	4.30	5.50	6.00	9.50	10.50	16.00	28.00	36.00	50.00
End to End, Screwed	$3\frac{3}{4}$	$3\frac{3}{4}$	$4\frac{3}{8}$	5	6	$6\frac{1}{8}$	$7\frac{1}{4}$	8	$8\frac{3}{4}$	$10\frac{1}{8}$	$11\frac{1}{4}$		14	$15\frac{1}{2}$	$22\frac{1}{2}$		
Face to Face, Flanged							$9\frac{1}{8}$	$10\frac{1}{8}$	$11\frac{1}{4}$	$12\frac{1}{4}$	$13\frac{1}{8}$		16	$18\frac{1}{2}$	$22\frac{1}{2}$	$27\frac{3}{8}$	$29\frac{3}{4}$
Height Over All	$5\frac{7}{16}$	$5\frac{7}{16}$	6	$7\frac{1}{16}$	$7\frac{3}{8}$	$8\frac{3}{8}$	$9\frac{9}{16}$	$10\frac{3}{8}$	11	$12\frac{1}{4}$	$13\frac{1}{8}$		$15\frac{7}{8}$	$20\frac{1}{8}$	$26\frac{3}{8}$	$30\frac{3}{8}$	$33\frac{3}{4}$
Size of Blow-off	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	1	1	$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{1}{4}$		2	2	3	3	3
Diameter Flanges							$6\frac{1}{2}$	$7\frac{1}{2}$	$8\frac{1}{4}$	9	10		11	$12\frac{1}{2}$	15	$17\frac{1}{2}$	$20\frac{1}{2}$

Water Strainer

This type of strainer is used on cold water pipes for the protection of the plumbing fixtures, meters, etc., from scale, cuttings, sand, shells and other foreign matter. It should also be used wherever a water pressure regulator is installed.

The body is galvanized cast iron, screwed ends, with a perforated sheet brass cylindrical screen, supported by a brass spring wire resting upon a ring in bottom of body. The bottom is a plug, which can be removed to empty the sediment pocket without the screen coming out.

Sizes $1\frac{1}{2}$ inch and smaller have 361 perforations to the square inch, and larger sizes 144 perforations, equal to about twice the area of the pipe connection.

Water Strainers

Size	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Each	2.00	2.25	4.00	6.75	11.70	17.00	22.50	27.00

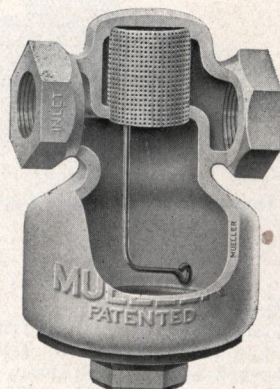


Fig. 2012 Water Strainer

Flange Union Type

This type of strainer is widely used to intercept scale, grit, and other cutting particles in pipe lines conveying steam, air, oil, gas, etc., where such foreign matter would be likely to prove destructive to the working parts of the apparatus.

Applied to the inlet side of pressure reducing valves, it prevents the accumulation of scale and grit that lodge on the valve seats, either scoring them or seriously interfering with the perfect operation of the regulator. This strainer is particularly recommended where low delivery pressures are required.

A clean-out plug is provided, by means of which the strainer may be readily cleaned.

Flange Union Type

Size	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Screwed	6.00	8.00	8.00	10.00	10.00	12.00	15.00	15.00
Flanged	10.00	13.00	13.00	16.00	16.00	20.00	25.00	25.00
Size	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6	7	8	10
Screwed	20.00	23.00	27.00	30.00	34.00			
Flanged	29.00	32.00	36.00	40.00	44.00	56.00	62.00	72.00

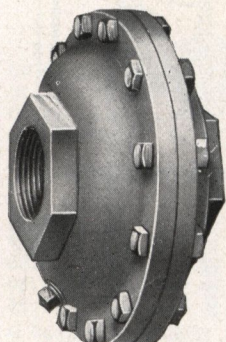


Fig. 2013 Flange Union Type

Brass Hose Valves

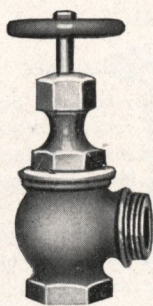


Fig. 2020
Hose Angle Valve

Without
Cap and Chain

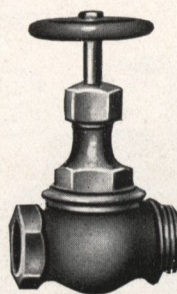


Fig. 2021
Hose Globe Valve

Brass Hose Globe and Angle Valves

Threaded on Outlet for Hose Connection. Screwed Inlet

Without Cap and Chain

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Plain, Rough Body, Fin. Trim., Iron Wheel	2.10	2.70	3.30	4.70	6.50	9.90	17.10	23.50
Plain, Rough Body, Fin. Trim., Brass Wheel	2.75	3.35	4.00	5.50	7.50	12.00	20.00	26.50
Nickel-plated, Rough Body, Fin. Trim., Brass Wheel	3.20	3.80	4.40	5.90	7.90	12.40	20.60	27.10
Plain, Finished All Over, Brass Wheel	3.20	3.90	4.60	6.20	8.40	12.50	22.50	30.00
Nickel-plated, Finished All Over, Brass Wheel	3.60	4.20	5.00	6.60	8.80	13.00	23.00	31.00

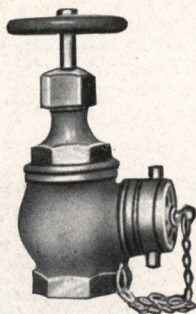


Fig. 2022
Hose Angle Valve, with Cap and Chain

Brass Hose Valves

With
Cap and Chain

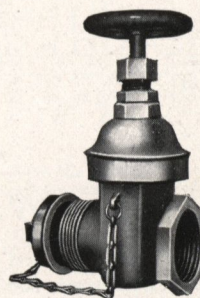


Fig. 2023
Hose Gate Valve, with Cap and Chain

Brass Hose Globe and Angle Valves

With Cap and Chain

Size	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Plain, Rough Body, Fin. Trim., Iron Wheel	4.00	5.00	7.00	9.50	15.00	22.00	30.00
Plain, Rough Body, Fin. Trim., Brass Wheel	4.65	5.75	7.80	10.50	16.50	24.80	32.80
Nickel-plated, Rough Body, Fin. Trim., Brass Wheel	5.05	6.15	8.20	10.90	16.90	25.40	33.40
Plain, Finished All Over, Brass Wheel	5.50	6.50	8.70	11.70	16.80	27.50	36.50
Nickel-plated, Finished All Over, Brass Wheel	5.90	6.90	9.00	12.00	17.20	28.00	37.50

Brass Hose Gate Valves

Without Cap and Chain

Size	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Rough Body, Fin. Trim., Iron Wheel	2.45	3.35	4.70	6.25	9.00	15.00	22.00
Rough Body, Fin. Trim., Brass Wheel	3.70	5.20	6.85	8.85	12.30	18.70	27.30
Finished All Over, Brass Wheels	5.20	6.90	9.10	11.85	17.30	26.00	38.00
Finished and Nickel-plated All Over, Brass Wheel	5.70	7.50	9.80	12.65	18.30	27.25	39.75

Brass Hose Gate Valves

With Cap and Chain

Size	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Rough Body, with Fin. Brass Cap and Chain	3.95	5.10	6.70	8.85	12.60	20.00	29.50
Finished All Over with Fin. Brass Cap and Chain	6.70	8.65	11.10	14.45	20.90	31.00	45.50
Finished and Nickel-plated All Over, with Cap and Chain	7.20	9.25	11.80	15.25	21.90	32.25	47.25

Note. Hose threads are in accordance with the Eastern or New York Corporation Standard. If different thread is required it will be necessary for customers to specify diameter and number of threads per inch, or send sample hose couplings—the latter being preferable.

Unless otherwise specified, valves will be furnished without Cap and Chain.

The Nason Low Pressure Damper Regulators

Standard Pattern

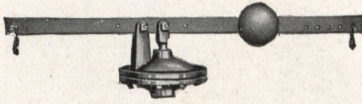


Fig. 2030
Low Pressure Damper Regulator
Standard Pattern

The Regulator shown in illustration is our standard type as manufactured by us for automatically controlling the check drafts on low pressure steam boilers employed in house heating. This Regulator is made in two sizes, of best material and workmanship, and can be furnished with or without our Bottle Siphon.

Plain as shown, 7-inch plates.....	5.00
Plain as shown, 9-inch plates.....	7.50

With Bottle Siphon

This illustration shows our Standard Low Pressure Damper Regulator as used in conjunction with our Nason Bottle Siphon, which latter has been designed by us to supersede the cumbersome and unsightly "U" and goose neck patterns heretofore used on steam house heating boilers.

As will be seen, it is neat and compact in appearance, and its form of construction is such as to insure complete immunity from injury to the diaphragm through contact with steam, thus indefinitely prolonging the life of the Regulator.

Complete as shown, 7-inch plates	7.75
Complete as shown, 9-inch plates	10.25

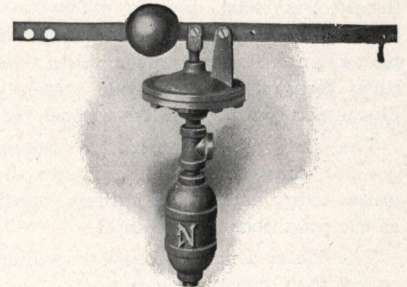


Fig. 2031
Low Pressure Damper Regulator
With Nason Bottle Siphon

Diaphragms

High and Low Pressure

Low Pressure

Diameter.....	6	7	7½	8	9	10
Each.....	.75	.75	.75	.75	1.00	1.50

High Pressure

Diameter...	6	6½	7	7¼	8	9	10	11½
Each.....	.50	.55	.60	.75	.90	1.00	2.00	4.00

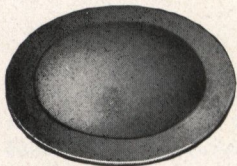


Fig. 2032
Low Pressure Diaphragm

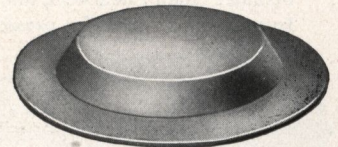


Fig. 2033
High Pressure Diaphragm

Spencer Damper Regulator

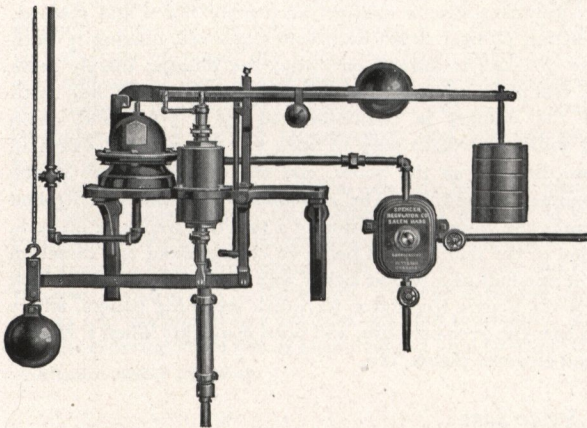


Fig. 2034. Spencer Damper Regulator

The Spencer Regulator has the power to move the damper or dampers in both directions by water pressure, and is not of necessity wide open or shut. It will close or open wide the damper or dampers on a variation of one pound of steam. It makes a partial stroke and stands at any point. On account of this positive power in both directions, connections to dampers by chains are dispensed with where possible and no weights are used.

From the above it will be understood that the Spencer Regulator will move from the open position to one-quarter, one-half, three-quarters, or fractions thereof, and come to and remain indefinitely at a state of rest, and then return to the open position, thereby making the only true and proper movement of the damper.

One of these dampers will govern a large number of boilers, by moving individual dampers or one or more main dampers.

Made in two sizes—No. 3 with 3-inch diameter motor and No. 4 with 4-inch diameter motor. Water inlet ⅜ inch, and for 3-inch water pressure should be at least 40 pounds; for 4 inches, 20 pounds. Price, 3 or 4 inch..... 70.00

The Victor Damper Regulator

High or Low Pressure. Hydraulically Operated

The Victor Damper Regulator is operated by the variation of the steam pressure, using water pressure for a motive power. When the steam pressure reaches the desired point it raises the weighted lever, opening the pilot valve which controls the supply and discharge of the water, admitting water pressure into the bottom of the motor cylinder. The piston stem being of large diameter makes the area on top of the piston much less than it is on the bottom, consequently when the water pressure is admitted to the bottom of the cylinder, the piston is forced upward. When the steam pressure has decreased below the desired amount the weighted lever lowers, allowing the pilot valve to close, and opening the discharge. The water pressure being then relieved from the bottom of the cylinder allows the pressure on top of the piston to push the piston downward.

The pilot valve is constructed entirely of metal and owing to its peculiar construction will graduate the movement of the motor piston either partially or entirely, opening and closing the damper as the conditions may require.

The Victor Damper Regulator will operate the heaviest dampers on less than one pound variation.

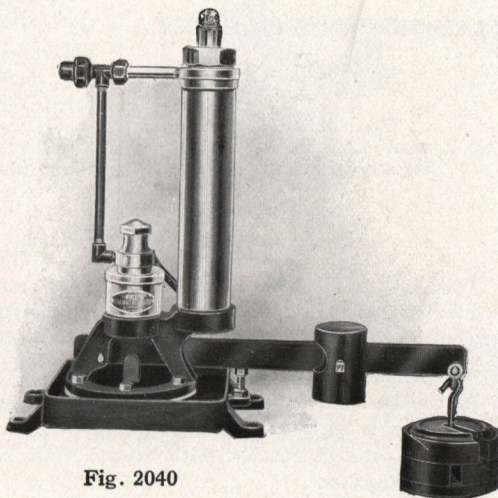


Fig. 2040

The Victor Low Pressure Damper Regulator

The Victor Low Pressure Damper Regulator is especially effective on low pressure heating installations, where it is desired to maintain a pressure of a few pounds or less.

Strainer Union, Brackets, and instruction card are furnished with each Regulator.

In ordering state steam pressure and minimum water pressure.

Price List

Victor Low Pressure Regulator with weights for 25 pounds	57.00
Victor High Pressure Regulator with weights for 100 pounds	75.00
Extra High Pressure Regulator, suitable for pressures to 200 pounds	150.00

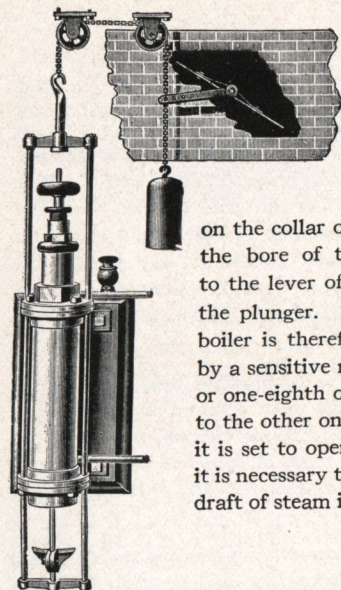


Fig. 2041
Curtis Damper
Regulator

Curtis Improved Damper Regulator

The Regulator consists of a gunmetal bronze cylinder accurately bored and reamed, within which is a long, loose-fitting plunger fitted with water grooves, making it both tight and frictionless. As the pressure is always one way, the plunger merely rests on the collar of the rod, and there can be no cramping even if the rod should be out of line with the bore of the regulator. The motion of the plunger is communicated by a yoke and chain to the lever of the damper, on which is hung sufficient weight only to open the damper and overhaul the plunger. The latter is operated by steam direct from the boiler, and the whole pressure in the boiler is therefore available to operate the damper if needful. The admission of steam is controlled by a sensitive metallic diaphragm, which operates the valve on a motion of a two-hundredth of an inch, or one-eighth of a pound pressure. The motion of the damper will begin to change from one direction to the other on a variation of steam pressure of one-half of a pound either way from the point at which it is set to operate. This feature recommends the Curtis Regulator for quick steaming boilers, where it is necessary to close the damper promptly to prevent over-pressure, and open it quickly when a sudden draft of steam is made, as in electric engines and elevator plants, etc.

Price List

No. 1, for Single Boiler	80.00
No. 2, for Two to Three Boilers	100.00
No. 3, for Largest Plants	150.00

Ford Dampner Regulator

For High and Low Pressure

This Dampner Regulator is designed with a view to compactness and is a device that will control a dampner on a slight variation in the gauge pressure. It is operated by a diaphragm and weighted lever, directly connected to an auxiliary water valve, the latter supplying the hydraulic piston that moves the dampner.

This Regulator is designed for high and low pressures and has given satisfactory results on gauge pressures as high as 165 pounds and as low as 2 pounds.

These Regulators are in extensive use. The extreme simplicity of their construction and their sensitiveness to pressure variations and consequent closeness of regulation insure a practically stationary boiler pressure, rendering them highly economical in coal consumption and eminently satisfactory to the operating engineer.

Price, with 2½-inch Hydraulic Cylinder, 12-inch stroke 72.00

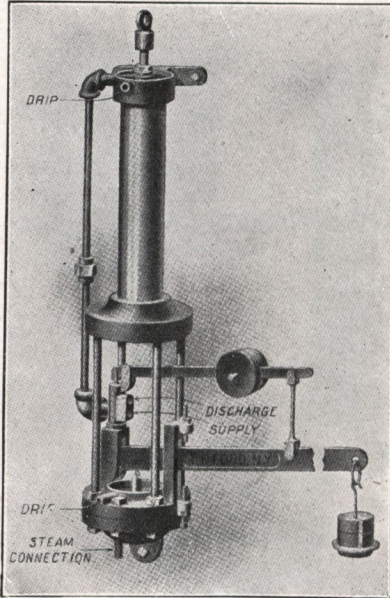


Fig. 2050. Ford Dampner Regulator

Victor Tank Regulator

The Victor Tank Regulator is designed for automatically controlling the temperature of hot water in tanks, which are heated by means of a steam coil, the motive power being water pressure. The operation is caused by the expansion and contraction of the expanding tube, thus directly affecting the supply and discharge of the water pressure to the diaphragm steam controlling valve.

The advantage of this type of regulator over those operated by volatile fluids, electricity or clockwork, is apparent, because of the simplicity of construction and operation.

The Victor Regulator is unlimited in its use. Although primarily intended for tank regulation it is effective for all industrial purposes, dry room regulation, pasteurizers, etc., and can be used in any place where the maintenance of a uniform temperature is desired. It can be adjusted to maintain any desired temperature, and will operate valves of any size.

The diaphragm steam valves are all brass in sizes up to and including 2 inch; 2½ inch and over, Iron Body.

These valves are well proportioned and have all of the best and most improved features of construction calculated to make the operation of the regulator accurate and effective. The bodies are the high lift pattern having full steam area. The bonnets have large gland stuffing boxes which can be tightened without removing the diaphragm top, on account of the open construction of the spider. Instead of having metal seats the valves are fitted for Removable Jenkin Discs. These valves will operate in any position, and are thoroughly tested before leaving factory.

In ordering state size of steam supply pipe to which diaphragm valve is to be connected; also the maximum steam and minimum water pressure.

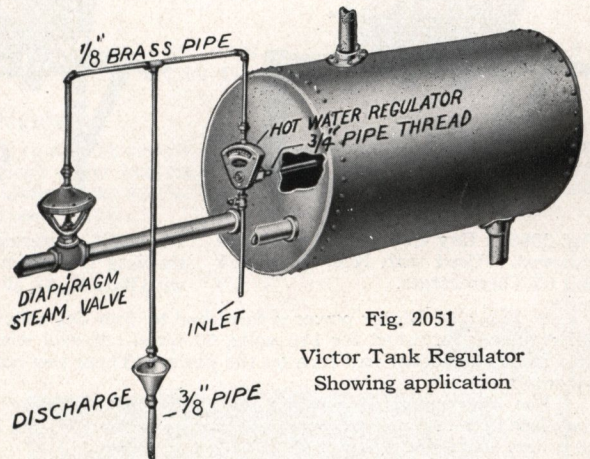
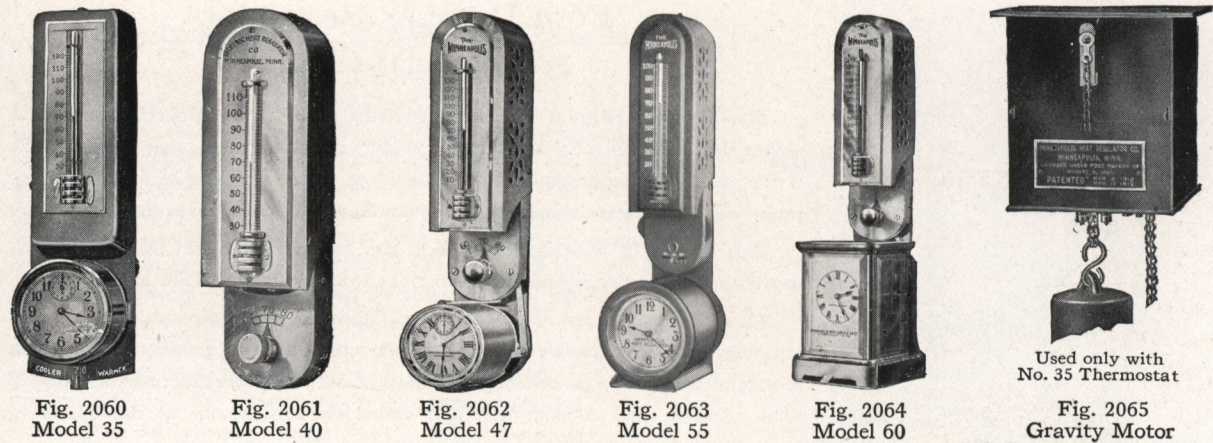


Fig. 2051

Victor Tank Regulator
Showing application

Size	¾	1	1¼	1½	2	2½	3	3½	4	5	6
Price, each	68.00	70.00	75.00	77.00	80.00	88.00	105.00	115.00	125.00	157.00	180.00

“Minneapolis” Heat Regulators



“Minneapolis” Heat Regulators

No. 35 with 1-day time and Fig. 2065 Gravity Motor only.....	35.00
No. 40 (no time) Spring Motor.....	40.00
No. 47 (1-day time) Spring Motor....	47.00
No. 55 (8-day duplex) Spring Motor..	55.00
No. 60 (8-day time) Spring Motor....	60.00
No. 40 Dry Cell Motor....	50.00
No. 47 Dry Cell Motor....	57.00
No. 55 Dry Cell Motor....	65.00
No. 60 Dry Cell Motor....	70.00
No. 40 A. C. Motor....	60.00
No. 47 A. C. Motor....	67.00
No. 55 A. C. Motor....	75.00
No. 60 A. C. Motor....	80.00

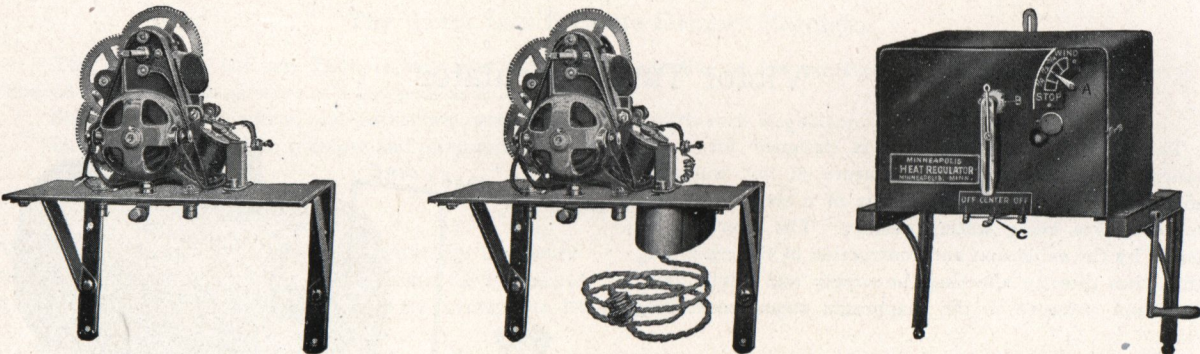


Fig. 2066. Dry Cell Motor with case removed. Used with Nos. 40, 47, 55 and 60 Thermostats.

Fig. 2067. Alternating Current Motor, showing transformer and plug. Used with Nos. 40, 47, 55 and 60 Thermostats.

Fig. 2068. Standard Spring Motor. Used with Nos. 40, 47, 55 and 60 Thermostats.

In Fig 2066 Motor power is furnished by four dry cells which require renewing but once a year. The A. C. Motors are regularly furnished for 110 volts, 60 cycle. Special windings to order. With the A. C. Motor simply screw the plug into any lamp socket and turn on the power. These two non-wind motors make the operation of a heat regulator entirely automatic.

The Minneapolis Regulators will control hot water, steam, gas, hot air, and combination heaters and are furnished complete with every detail required for installation. Spring Motor, Fig. 2068, will be furnished with Models 40, 47, 55 and 60 unless otherwise ordered.

Price List of parts: Thermostats only. No. 40 (no clock) 17.00. No. 47 (1-day clock) 24.00. No. 60 (8-day square clock) 39.00. Spring Motor, 19.00. D. C. Motor, 29.00. A. C. Motor, 39.00.

The “Marvel” Temperature Regulator

For controlling steam, hot water and warm air heaters, steam valves and gas valves

The “Marvel” can be furnished with and without time attachment and is used for the same purpose as the Minneapolis in the automatic control of temperature in dwellings, green houses, etc. The motor is electrically operated by dry cells and requires no winding.

Price, without Time Attachment.....	40.00
Price, complete with Time Attachment.....	47.00

The Marvel is also widely used in the automatic control of gas to gas-fired steam and water boilers, gas furnaces, etc., and in district steam control. In this service it is used in connection with our Balanced Control Valves, Figs. 1840 and 1841.

Complete descriptive matter on request.

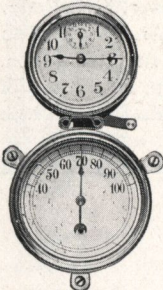


Fig. 2069
“Marvel”

Powers Tank Regulators

No. 10 Regulator for Steam-heated Hot Water Tanks

This Regulator is of the adjustable type, so constructed that by means of the movable pointer, it can be set to maintain the tank temperature at any desired point between 100 and 200 degrees. Can also be furnished for special purposes to operate at either higher or lower temperatures. It is of the single valve type, so designed that all parts are easy of access, with special provision for quickly flushing the valve chamber to clear it of any accumulation of dirt which might interfere with its operation. The Regulator is sensitive in its operation and thoroughly reliable. It should be installed substantially, as indicated in illustrations, but the diaphragm steam valve may be placed in any convenient location where it will control the supply of steam. The steam valves have diaphragms of extra large and heavy construction, insuring operation under all conditions, while the Regulator itself is equipped with a water pressure reducing valve and strainers to insure against injury from excessive pressure or dirt in the water supply.

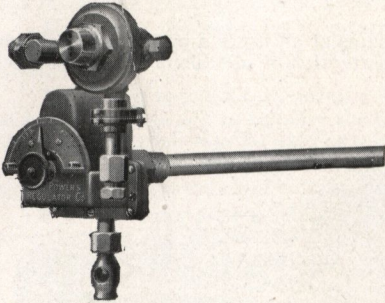


Fig. 2070. Regulator

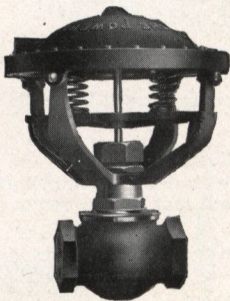


Fig. 2071
Diaphragm Steam Valve

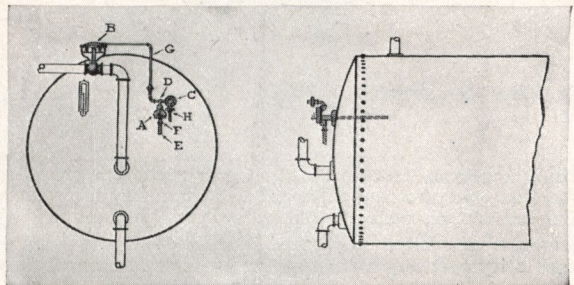


Fig. 2072
Showing Regulator and Diaphragm
Valve applied to Hot Water Tank

No. 10 Regulator

Regulator with Valve...	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	7	8	9	10
Each.....	70.00	75.00	80.00	90.00	95.00	100.00	120.00	150.00	175.00	200.00	225.00	250.00	275.00

No. 11 Regulator

This Regulator is of the self-contained type and is adapted to a great variety of uses. Is especially designed for steam heated hot water service tanks, but can be used effectively on feed water heaters, pasteurizers, cooking apparatus, processing vats, dry kilns, warming ovens, etc.; hotels, apartment buildings, breweries, laundries and similar institutions furnish a wide field for this regulator. Construction is all metal. No water drip.

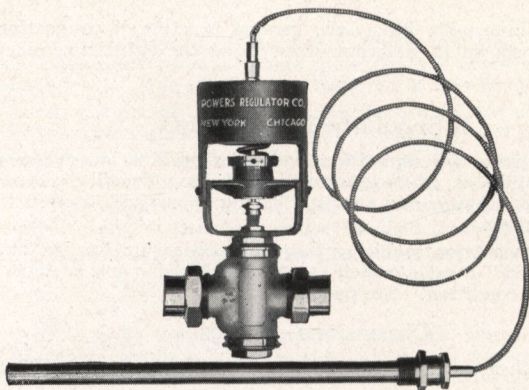


Fig. 2073. Regulator

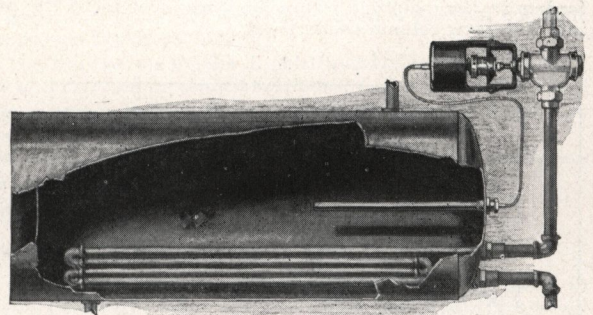


Fig. 2074. Typical Installation

This Regulator is designed for conditions that do not permit of using an auxiliary water or air supply for the operation of the Diaphragm Steam Valve. The expansion tube which projects into the tank generates a pressure by contact with the hot water and this pressure is communicated through the flexible connecting tube to the bonnet of the steam valve, opening and closing the latter to maintain the desired water temperature.

No. 11 Regulator

Regulator with Valve....	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	8
Each.....	65.00	70.00	75.00	80.00	90.00	95.00	100.00	110.00	120.00	175.00	200.00	250.00

Nason Immersed Valve Feeder

This Feeder has been a leading "Nason" specialty for more than 30 years. It should be included as a necessary part of every low pressure steam heating installation.

The operation of the Feeder is wholly automatic and dependable. Its use insures at all times a proper water supply and a permanent water level in the heater. This means boiler insurance against inattention of caretakers and the possible wrecking of the heater.

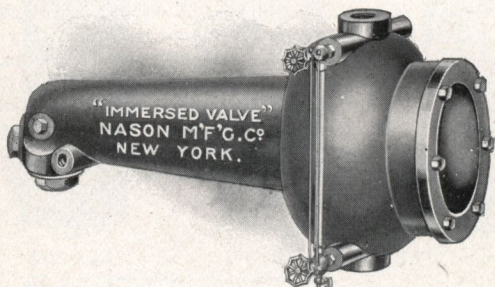
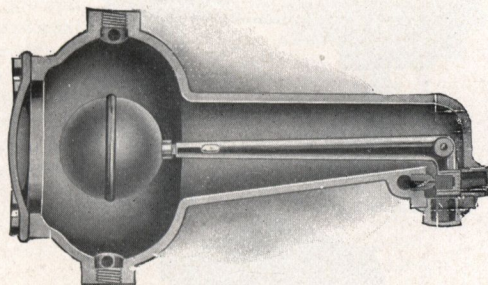


Fig. 2080. Immersed Valve Feeder



Interior View Immersed Valve Feeder

A vitally important feature of this Feeder is the immersion of the valve in water, which definitely prolongs the durability of the seat and affords a corresponding immunity from leakage. Also both valve and seat can be removed through one opening without disconnecting the feeder or taking out the lever.

These features are found only in the Immersed Valve Feeder, and they immediately establish its superiority over any other type of feeder of similar construction.

Referring to enlarged view of valve, removal of Cap "A" makes the controlling valve immediately accessible, and through this opening the valve may be readily adjusted by varying its distance from the seat until the desired water level is obtained. The valve can be removed and renewed through the same opening.

The Immersed Valve Feeder is tested to 50 pounds. It is designed for steam pressures not exceeding 20 pounds, and water pressures not exceeding 40 pounds. In operation, to insure a positive feed, the water pressure should exceed the steam pressure by not less than 10 pounds.

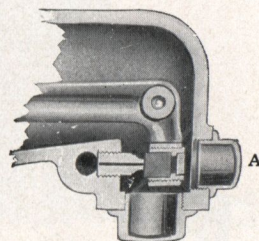
Where water pressures are higher than the feeder range, one of our Water Pressure Regulating Valves should be used.

The copper float employed is made exclusively for this Feeder and is fully guaranteed. Enlarged View of Valve

The Feeder can be installed on either side of the heater—all the connections being in duplicate. It can be used with or without water gauge, but preferably with this attachment.

There are many thousands of these feeders in use, and as a positive safeguard their merit justifies their popularity and universal adoption.

To prevent erratic water levels and flooding, which almost invariably follow the general practice of connecting feeders in the main and return lines, we recommend the installation shown in diagram—connecting the equalizing pipes into the water column connections.



Enlarged View of Valve

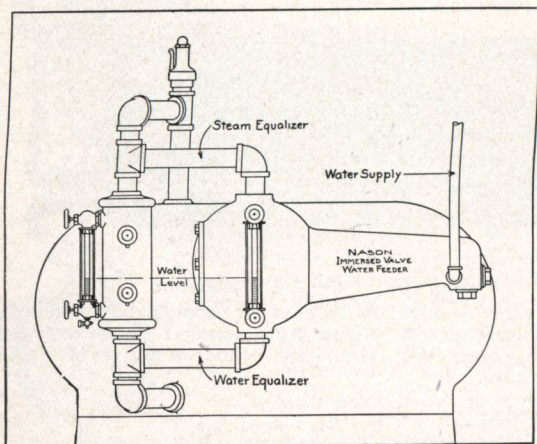


Diagram Showing Approved Method of Installing the Nason Immersed Valve Water Feeder

It Should be Remembered

that this Feeder is designed for conditions found in low pressure steam installations, where practically all the condensation returns to boiler by gravity, and that its feeding capacity is limited to such conditions.

For any service requiring large capacities we furnish our "Multiservis" Feeder, which can be adapted for any pressure, capacity or condition. See page 209.

Dimensions—Prices

Length, inches.....	23 ¹ / ₄
Height, inches.....	13 ³ / ₈
Width, inches.....	9
Weight, pounds.....	68
Boiler Connections, inch.....	1
Feed Water Inlet, inch.....	¹ / ₂
Water Gauge Connections, inch.....	¹ / ₂

Price List—Made One Size Only

Without Water Gauge, each.....	20.00
With Water Gauge, Complete, each.....	24.00

Nason Multiservis Water Level Control

This Feeder is intended primarily for supplying water and maintaining a predetermined and constant water level in evaporators, steam boilers and other apparatus where the external or water pressure exceeds the internal or steam pressure.

Because of the flexibility in design it is easily adaptable for special conditions, such as Drip Tank Controller, large capacity Pump Governor, low pressure Steam Trap, and Automatic Regulator for centrifugal pumps under constant vacuum, etc.

Where it is impossible to install a float control within a tank or receiver, the Multiservis Feeder can be readily adapted, as it is only necessary to equalize the fluid level. Should it be found impossible to use a separate feed line, as illustrated, the water equalizer may be used as a feed line and the control valve located therein.

The simplicity of design, visibility of practically all moving parts, together with the wide capacity range obtainable by the use of various sizes of valves, are features that recommend the Multiservis Feeder for favorable consideration.

For evaporator service the accessibility of all parts of the feeder for the purpose of cleaning will be recognized and appreciated as highly important.

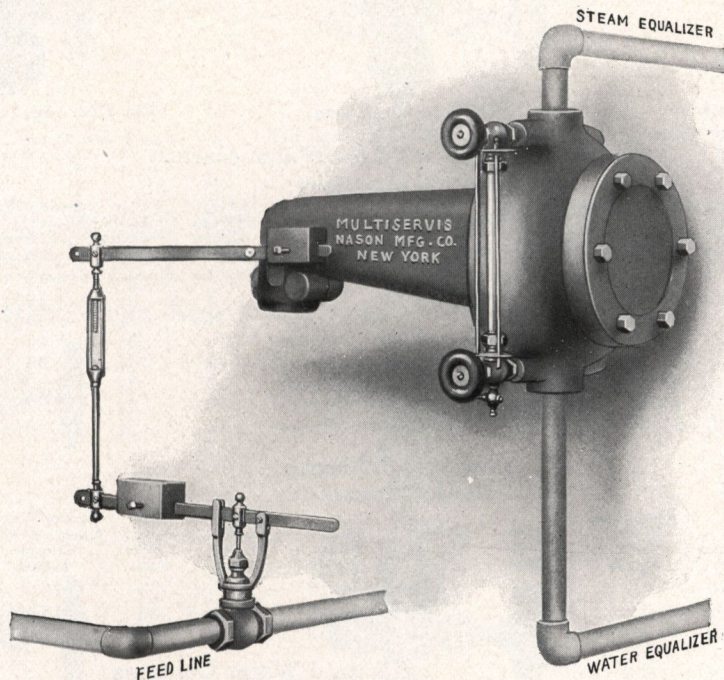


Fig. 2090. Multiservis Water Level Control

The Multiservis Feeder was originally designed for use in the automatic control of the water supply to a number of the evaporator systems, where the successful operation of the apparatus is largely dependent upon a uniform constant water level. It is extensively employed in this service, and has proven highly satisfactory.

As the size of the control valve determines the capacity of the Multiservis Feeder, inquiries and orders should specify the maximum quantity of water to be supplied and the internal and external pressure conditions.

Where the Feeder operates against an internal pressure, as in steam boilers, the water pressure should exceed the steam pressure by not less than ten pounds.

The numerous and wide variety of services to which this Feeder is applicable obviously renders its standardization difficult and we therefore invite detailed particulars for unusual conditions.

Control valve employed is illustrated and described on page 184.

Operation

The body casting is located so that its center coincides with the desired water level, which actuates a float in the feeder chamber. This in turn imparts its motion to the lever attached to the balanced control valve, automatically opening and closing the valve as the requirements demand.

It will therefore be seen that the positive operation of the Multiservis Feeder insures a definite water level under conditions calling for either a constant or intermittent supply.

Capacities and List Prices

Size of Control Valve.....	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Capacity in gallons per hour with 10 Pounds differential between Internal and External Pressure.....	1200	1380	1920	3000	4500
Capacity in Pounds Water per Hour under the same conditions.....	10,000	11,500	16,000	25,000	37,500
Price, Feeder, Link and Control Valve.....	32.00	35.00	39.00	43.00	46.00

Reliance Safety Water Columns

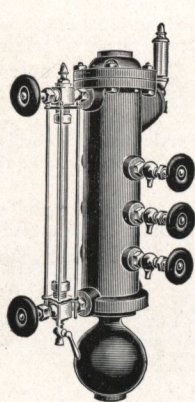


Fig. 2100. Full Trimmed

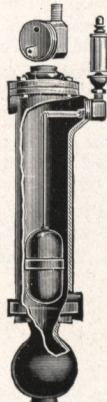


Fig. 2101. Low Alarm

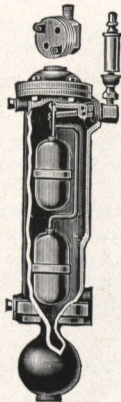


Fig. 2102. High and Low Alarm

Combined High and Low Water Alarms
General Dimensions

Style No.	Kind and Size Boiler Inch	Variation Between Alarms Inches	Columns Each	Steam and Water Conn. Inches	Blow-off Inch	Water Gauge Inches	Gauge Glass Inches	Gauge Cocks Center Inches	Size Gauge Cocks Inch	Center Water Conn. to Top Column Inches	Diameter Column Inches	Length Over all Inches
1	36 to 54	6	28.00	1	1/2	1/2x14	5/8x12	3	1/2	16	3 3/4	23 1/4
1 1/2	36 to 54	6	28.00	1 1/4	3/4	1/2x14	5/8x12	3	1/2	19 3/4	5	28 1/4
5	54 to 72	8	30.00	1 1/4	3/4	3/4x18	3/4x16	4	3/4	20 1/2	4 1/4	29 1/2
7	Water Tube	12	35.00	1 1/2	3/4	3/4x21	3/4x19	6	3/4	26	5 1/4	36
9	Vertical	18	40.00	1 1/2	1	3/4x28	3/4x24	9	3/4	33 1/2	5 1/4	44
11	Vertical	24	42.50	1 1/2	1	3/4x32	3/4x30	12	3/4	37 3/4	5	48
13	Vertical	30	45.00	1 1/2	1	3/4x38	3/4x36	10	3/4	52 1/2	5	64
15	Vertical	36	50.00	1 1/2	1	3/4x44	3/4x42	12	3/4	58 1/2	5	70

Low Water Alarms
General Dimensions

Style No.	Kind and Size Boiler Inches	Columns Each	Steam and Water Conn. Inches	Blow-off Inch	Water Gauge Inches	Gauge Glass Inches	Gauge Cocks Center Inches	Size Gauge Cocks Inch	Center Water Conn. to Top Column Inches	Diameter Column Inches	Length Over All Inches
2	36 to 54	25.00	1	1/2	1/2x14	5/8x12	3	1/2	16	3 3/4	23 1/4
6	54 to 72	28.00	1 1/4	3/4	3/4x16	3/4x14	4	3/4	18 1/4	4 1/4	27 1/4
8	Vertical	35.00	1 1/2	3/4	3/4x21	3/4x19	6	3/4	26	5 1/4	36

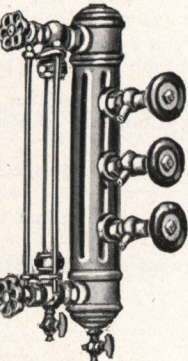


Fig. 2103. Standard

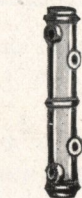


Fig. 2104
Special Small Pattern



Fig. 2105
Fancy Pattern

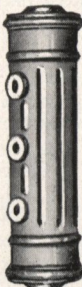


Fig. 2106
Philadelphia Pattern

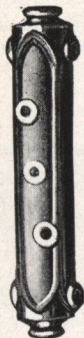


Fig. 2107
Oval Pattern

Number	1	1 1/2	2	3	4	5	6	7
Center to Center of Boiler Connections, inches	12	14 1/2	16	19	16	28	40	52
Center to Center of Water Gauge Connections, in.	12	14 1/2	16	19	16	24	36	48
Center to Center of Gauge Cock Connections, in.	3	3 3/8	4	4 3/4	4	7	13	19
Extreme Length, inches	15 1/2	18	20	23	21	28	40	52
Tapped for Boiler Connections, inches	1/2	3/4	3/4	1	1	3/4	3/4	1
Tapped for Water Gauge Connections, inch	1/2	3/4	3/4	3/4	3/4	3/4	3/4	3/4
Tapped for Gauge Cocks, inch	3/8	1/2	1/2	3/4	1/2 or 3/4	1/2	1/2	3/4
Tapped Top and Bottom, inch	1/4	1/2	1/2	1	1	1/2	1/2	1
Column, only, not trimmed	1.00	1.30	1.55	2.50	2.90	3.40	5.50	8.25

Nos. 1, 1 1/2, 2, 3 and 4 have Boiler Connections on Side. Nos. 5, 6 and 7 have Boiler Connections on Ends.

Nason Special Water Columns

Fig. 2106

Height, in.	18 1/2
Diameter, in.	4 1/2
Boiler Conn., in.	1 1/4
Gauge Cocks, in.	1/2 or 3/4
Center Water Gauge Cocks, in.	14
Each	3.00

Fig. 2107, Oval Pattern

Height, in.	21 3/4
Dimensions, in.	4x2 1/2
Boiler Conn., in.	3/4
Gauge Cocks, in.	1/2
Center Water Gauge Cocks, in.	16
Each	2.75

Standard Pattern Water Gauges

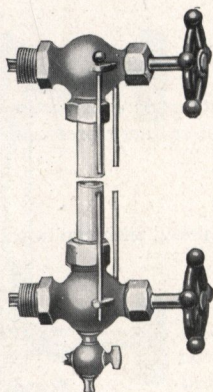


Fig. 2110
Self-cleaning, Two Guard Iron Wheel, Rough
Body, Sand-blasted and Lacquered

No.	2	3	3½
Shank	¾	1½	¾
Size Glass	5/8x10	5/8x12	¾x16
Each	2.75	3.00	4.50

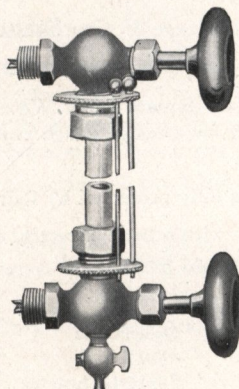


Fig. 2111
Self-cleaning, Two Guard, Wood
Wheels, Polished Body

No.	8	9	10
Shank	¾	1½	¾
Glass	5/8x12	5/8x12	¾x16
Each	3.75	4.25	5.50

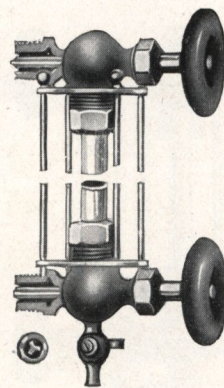


Fig. 2112
Self-cleaning, Four Guard, Wood Wheels,
Round Body, Polished

No.	12	14
Shank	1½	¾
Glass	5/8x12	¾x16
Each	5.25	6.00

The above Gauges are suited for pressures to 150 pounds, and in Figs. 2111 and 2112 the upper and lower arms are each cast in one piece, avoiding joints found in most standard gauges, and preventing possibility of leaks.

Light Pattern Water Gauges for Pressures not Exceeding 50 Pounds

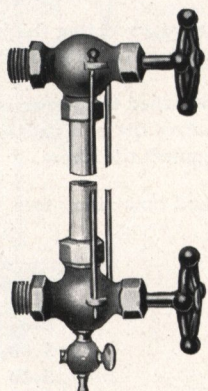


Fig. 2113
Light Weight Pattern, Iron Wheel, Rough Body,
Two Guards, Sand Blasted and Lacquered
For House Heating Boilers

No.	2-A	3-A
Shank	¾	1½
Glass	5/8x10	5/8x12
Each	2.50	2.75

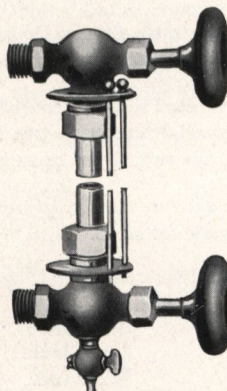


Fig. 2114
Light Weight Pattern, Wood Wheel, Polished
Body, Two Guards. Designed for use
on Low Pressure Heating Boilers

No.	8-A	9-A
Shank	¾	1½
Glass	5/8x10	5/8x12
Each	3.25	3.75

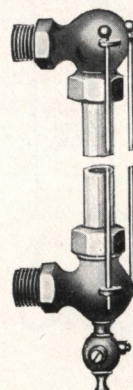


Fig. 2115
Expansion Tank Gauge, Rough Body,
Two Guard, Sand-blasted
and Lacquered

No.	0	00
Shank	¾	1½
Glass	5/8x12	5/8x12
Each	2.00	2.25

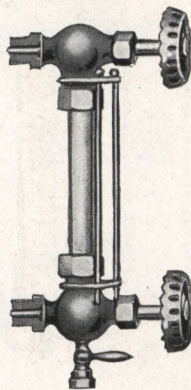


Fig. 2116
Special Extra Heavy
Water Gauge

Special Extra Heavy Water Gauge, Fig. 2116

This is an exceptionally heavy and substantial water gauge and is intended for use on high pressure boilers carrying up to 250 pounds pressure.

No.	Glass	Guards	Wheel	Shank, inch	Each
45	5/8x12	2	Brass	1½	10.00
47	¾x16	4	Brass	¾	11.00

Pneumatic Water Gauge with Ball Check, Fig. 2117

In case the glass breaks the ball checks close instantly and automatically, thus preventing the air from escaping to any appreciable extent. If not convenient to replace the glass at once, any leakage from the arms can be entirely prevented. The lower arm is provided with a valve which may be shut off tight. The upper arm is provided with a brass disc attached by wire to the guard rod lug. Remove the glass packing nut, insert disc in nut and replace.

No.	Finish	Shank	Guards	Glass	Each
4	Rough Body	1/2 inch	Two	5/8x12	3.50

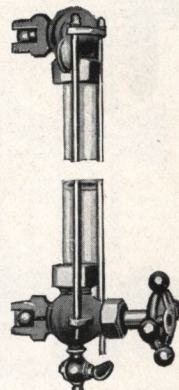


Fig. 2117
Pneumatic Water
Gauge with Ball Check

Penberthy Water Gauges

Standard Square Body

For Pressures Up to 250 Pounds—Non-Automatic

The Standard Square Body Water Gauge is of non-automatic construction. It is a high grade but inexpensive gauge especially designed for all ordinary pressure conditions to 250 pounds.

The glass is fully protected by four strong guard rods.

In common with other Penberthy water gauges, it is furnished with cap in top through which the glass may be replaced.

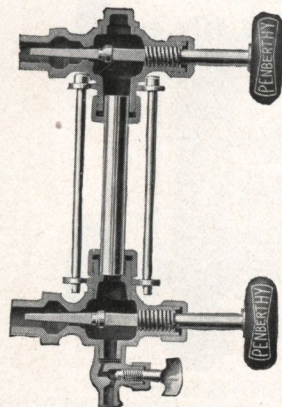


Fig. 2120
Sectional View Showing Self-cleaning Stem Attachment

Price List

Size Shank	Gauge Glass	Guards	Wheels	Each
$\frac{3}{8}$ inch	$\frac{1}{2}$ x12 inch	Four	Wood	3.50
$\frac{1}{2}$ inch	$\frac{5}{8}$ x12 inch	Four	Wood	3.50
$\frac{3}{4}$ inch	$\frac{3}{4}$ x16 inch	Four	Wood	4.00

We will furnish this gauge with iron wheels at same price, but orders must so specify, otherwise wood wheels will be sent.

Quick Closing Square Body Water Gauge

For Pressures Up to 250 Pounds

This Gauge is similar to the Square Body Water Gauge shown above, excepting that the stems are furnished with lever handles and are made with coarse threads, making the gauge quick closing.

Both Valves are operated simultaneously by the pull of a chain attached to special ring device, which is a distinctly special feature in this type of gauge. It equalizes the pull and closes both valves equally tight. We supply the rings and sufficient chain to connect the levers.

When ordering be sure to state if additional chain is wanted, and how many feet. A small extra charge will be made for same.

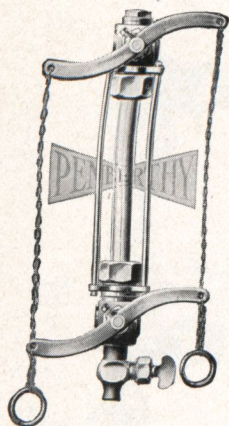


Fig. 2121
Showing Lever Handles and Chain

Price List

Size Shank	Gauge Glass	Guards	Each
$\frac{3}{8}$ inch	$\frac{1}{2}$ x12 inch	Four	5.00
$\frac{1}{2}$ inch	$\frac{5}{8}$ x12 inch	Four	5.00
$\frac{3}{4}$ inch	$\frac{3}{4}$ x16 inch	Four	6.50

Square Body Navy Water Gauge

Extra Heavy Design—Non-Automatic

The "Navy" Gauge is especially designed for use on large boilers where the pressure carried requires extra heavy fittings or where extra fine fittings are required. The Gauge is of beautiful design as well as being exceptionally strong in all of its parts.

Unless otherwise specified the Brass Wheel Gauge will be sent on all orders. We supply the Rings and sufficient chain to connect the levers for the quick-closing gauge. When ordering, state if additional chain is wanted, and how many feet. A small extra charge will be made for same.

These Gauges are furnished with Special Valve Design Air Cock.

With Brass Wheels

Size Shank	Gauge Glass	Wheels	Guards	Each
$\frac{3}{8}$ inch	$\frac{1}{2}$ x12 inch	Brass	Four	6.00
$\frac{1}{2}$ inch	$\frac{5}{8}$ x12 inch	Brass	Four	6.00
$\frac{3}{4}$ inch	$\frac{3}{4}$ x16 inch	Brass	Four	7.50

With Chain and Lever Handles

Size Shank	Gauge Glass	Guards	Each
$\frac{3}{8}$ inch	$\frac{1}{2}$ x12 inch	Four	7.00
$\frac{1}{2}$ inch	$\frac{5}{8}$ x12 inch	Four	7.00
$\frac{3}{4}$ inch	$\frac{3}{4}$ x16 inch	Four	8.50

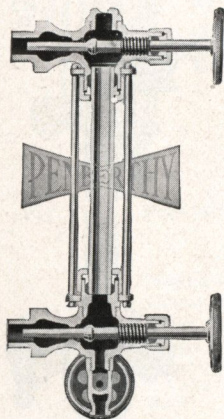


Fig. 2122
Brass Wheel and Self-cleaning Stem Attachment

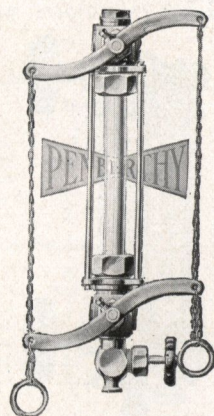


Fig. 2123
With Chain and Lever Handle

Safeguard Automatic Gauges

Safeguard Automatic Water Gauge

This Gauge is tested to 300 pounds, and is thoroughly inspected before leaving factory.

Simple and strong in construction, has no springs or levers to get out of adjustment. Operates on any pressure.

Self-cleaning by the action of the blow-off vibrating the balls.

Balls cannot seat unless glass is broken, because the upper ball seat is designed to leak and cannot be stopped accidentally.

Has Dripless Pet Cock which when closed is absolutely tight.

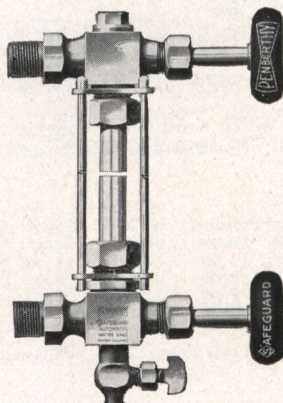


Fig. 2130 Full View

Size Shank	Gauge Glass	Each
$\frac{3}{8}$ inch	$\frac{1}{2}$ x12 inch	5.00
$\frac{1}{2}$ inch	$\frac{5}{8}$ x12 inch	5.00
$\frac{3}{4}$ inch	$\frac{3}{4}$ x16 inch	6.50

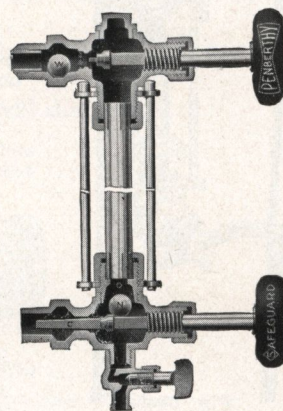


Fig. 2131. Sectional View

Safeguard Navy Water Gauge

Extra Heavy Design—Automatic

In this Gauge have been combined all the good features of the Safeguard Automatic Gauge shown above and the Regular Navy Gauge shown on preceding page. It represents the acme of water gauge manufacture, both in workmanship and mechanical perfection.

We can also furnish this Gauge in the quick-closing style, as indicated in price list.

Unless otherwise specified, the Brass Wheel Gauge will be furnished on all orders.

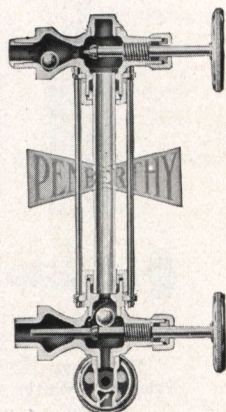


Fig. 2132. Safeguard Navy Water Gauge

With Brass Wheels, 4 Guards

Size Shank	Gauge Glass	Wheels	Guards	Each
$\frac{3}{8}$ inch	$\frac{1}{2}$ x12 inch	Brass	Four	7.50
$\frac{1}{2}$ inch	$\frac{5}{8}$ x12 inch	Brass	Four	7.50
$\frac{3}{4}$ inch	$\frac{3}{4}$ x16 inch	Brass	Four	10.00

With Chain and Lever Handles

Size Shank	Gauge Glass	Guards	Each
$\frac{3}{8}$ inch	$\frac{1}{2}$ x12 inch	Four	8.50
$\frac{1}{2}$ inch	$\frac{5}{8}$ x12 inch	Four	8.50
$\frac{3}{4}$ inch	$\frac{3}{4}$ x16 inch	Four	11.00

This Gauge is fitted with Special Valve Design Air Cock. See Fig. 2131.

Safeguard Automatic Oil Gauges

For Use on All Kinds of Oil Tanks

The Safeguard Automatic Oil Gauges are especially designed for use on all kinds of oil tanks.

The feature of these gauges is to automatically shut off the flow of tank contents when glass breaks. The action of the shut-off balls is positive, instantaneous and perfectly reliable.

The Gravity Tank Gauge differs from the Pressure Tank Gauge only in the construction of the lower arm, which has the ball located in the shank itself, so that when there occurs a flow from the tank through the gauge arms, the balls will, with minimum resistance, go to their seats, both of which are perfectly tight, preventing loss of liquid.

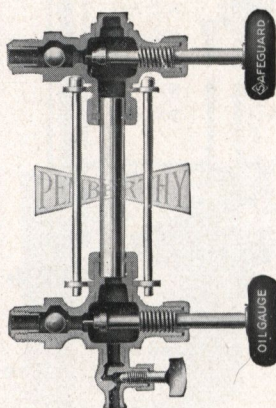


Fig. 2133. Safeguard Oil Gauge for Gravity Tanks

Size Shank	Gauge Glass	Each
$\frac{3}{8}$ inch	$\frac{1}{2}$ x12 inch	5.00
$\frac{1}{2}$ inch	$\frac{5}{8}$ x12 inch	5.00
$\frac{3}{4}$ inch	$\frac{3}{4}$ x16 inch	6.50

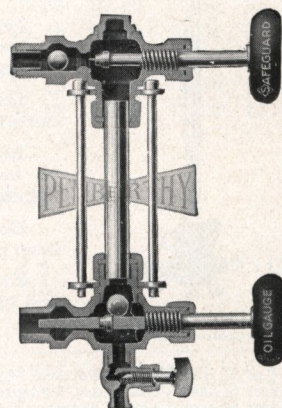


Fig. 2134. Safeguard Oil Gauge for Pressure Tanks

Water Gauges

The "P. B. H." Water Gauge. Quick-closing

Opened or shut by less than a quarter turn. When a glass breaks, the gauge is shut off by a pull of the chain. No scalds; no burns. Steam and water passages are ample and have no "pockets" to collect sediment. Body is extra heavy and of best steam metal. Nuts are large to accommodate large rubber washers.

These Gauges can be equipped with an "automatic" attachment which shuts off both water and steam automatically when the gauge glass accidentally breaks. For this attachment add 4.50 to list price.

List Prices

	Shank Inch	Size Glass Inch	Polished Brass	Nickel- plated	Rough Brass
Regular, Heavy Pattern.....	1/2 or 3/4	3/4	12.00	14.00	11.00
Medium Weight Pattern.....	1/2	5/8	9.00	11.00	8.00
Medium Weight Pattern.....	3/4	3/4	9.00	11.00	8.00
Extra Heavy, 375 Pounds Working Pressure.....	3/4	3/4	22.00	24.00	21.00
Extra Heavy, Marine 4 inch by 1 1/8 inch Flange.....	3/4	3/4	34.00	36.00	33.00

Glass and brass guard rods included for gauge centers up to 18 inches as well as brass safety chain, sufficient to operate Gauge 10 feet from floor.

In ordering state distance between gauge centers.
Always specify finish wanted.

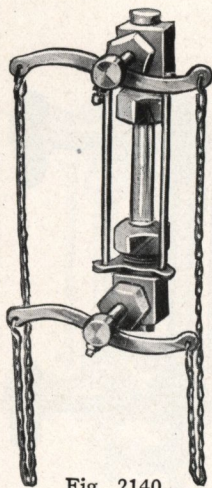


Fig. 2140
P. B. H. Water Gauge

Prismatic Water Gauge

The Prismatic Water Gauge is fitted with a flat glass which, owing to its peculiar design, quality and temper will not blow out under the highest pressures and temperatures or under sudden changes of either. The frequent breakage of glass tubes in Stationary or Marine Boiler Rooms or in the locomotive cab often results in injury to men. With the Prismatic Water Gauge the danger from flying glass incidental to a gauge glass explosion is eliminated.

The Water Level is distinctly indicated at all times. The glass and its casing are so designed that the water shows black while the steam space takes on a silver appearance. This makes it impossible to mistake the water level, as is so often the case with the ordinary water glass, particularly if the boiler tends to foam.

The Frame in which the glass is mounted consists of a front and a back portion, machined to true surfaces, making a perfect joint with the back gasket and front pad and insuring that most important condition—tight joints.

The Prismatic Water Gauge is interchangeable with the ordinary tubular water glass.

Prices—Each

No.	For Distance between Nuts of Stuffing Boxes Inches	Length of Body Inches	Exposed Length of Glass ("Sight Length") Inches	Price Gauge Complete Without Fittings
2	7 to 9	6	4 5/8	16.00
4	9 to 10 1/4	7 3/4	6 1/2	24.00
5	10 1/4 to 12 3/4	9 1/4	7 1/8	28.00
7	12 3/4 and larger	11 1/8	9 5/8	40.00

Unless otherwise specified, Sizes Nos. 2 and 4 will be made with 5/8-inch stems, and Nos. 5 and 7 will be made with 3/4-inch stems. Unless otherwise specified, stems will be furnished 4 3/4 inches long, measured from under side of "hex."

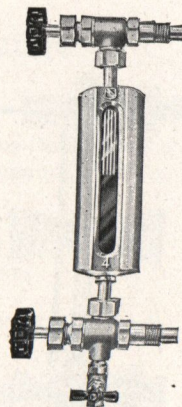


Fig. 2141
Prismatic Water
Gauge

The Graber Indicating Automatic Water Gauge

Provided with automatic valves which close instantly should a glass break, thus preventing danger from scalding and other damage usually resulting from this cause.

Danger of false water level is avoided, as the position of the outside levers always indicate whether valve is open or closed.

May be operated from boiler room floor by chains attached to outside levers. Valves are self-cleaning, and should be opened and closed by hand at least once a day.

Bottom Blow-off Valve should be frequently blown out to keep glass thoroughly clean.

For gauges with guard rods above 18 inches in length, glass, and blow-off valve, extra charge will be made.

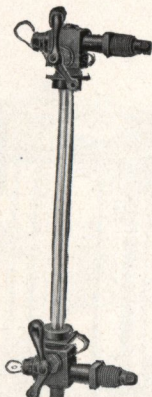
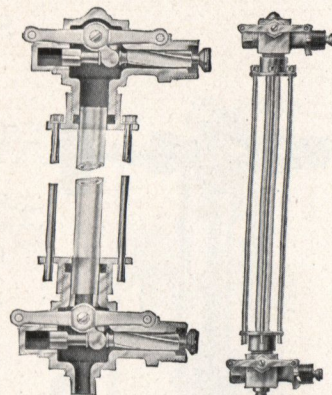


Fig. 2142. Regular Pattern
without Guard Rods



Section
Extra Heavy Pattern
with Guard Rods

Fig. 2143

1/2 or 3/4 inch Regular Pattern, Plain Brass, Finished, without Guard Rods, per set.....	6.00
1/2 or 3/4 inch Plain Brass, Finished, with Guard Rods, per set.....	7.50
1/2 or 3/4 inch Regular Pattern, Finished and Nickel-plated, without Guard Rods, per set.....	7.00
1/2 or 3/4 inch Regular Pattern, Finished and Nickel-plated, with Guard Rods, per set.....	8.50
3/4 inch Extra Heavy, Plain Brass Finish, with Guard Rods, per set.....	12.00
3/4 inch Extra Heavy Pattern, Finished and Nickel-plated, with Guard Rods, per set.....	13.00

Water Gauge Glasses

We are Sole Agents in the United States for the Invincible and Tenax Gauge Glasses, and import them direct from Great Britain.

The size is labeled on end of each package, making them most desirable for stock, and we warrant them genuine and equal to any on the market.

Lengths not regular will be charged at the price of next longest tube of same diameter.

Each package contains a half dozen glasses.



Fig. 2150. Invincible, with Ground Ends, for Standard Pressures

Length Inches		External Diameter					Length Inches		External Diameter				
		1/2	5/8	3/4	7/8	1			1/2	5/8	3/4	7/8	1
10	Per doz..	3.00	3.00	3.60	5.04	6.12	19	Per doz..	5.64	5.64	7.08	9.60	11.52
11	Per doz..	3.24	3.24	3.96	5.64	6.72	20	Per doz..	6.00	6.00	7.44	10.20	12.12
12	Per doz..	3.60	3.60	4.32	6.12	7.32	22	Per doz..	6.60	6.60	8.16	11.16	13.44
13	Per doz..	3.84	3.84	4.80	6.60	7.92	24	Per doz..	7.20	7.20	8.88	12.12	14.64
14	Per doz..	4.20	4.20	5.16	7.08	8.52	30	Per doz..	9.00	9.00	11.16	15.24	18.24
15	Per doz..	4.44	4.44	5.52	7.56	9.12	36	Per doz..	10.80	10.80	13.44	18.24	21.96
16	Per doz..	4.80	4.80	5.88	8.16	9.72	48	Per doz..	14.52	14.52	18.00	24.36	29.16
17	Per doz..	5.04	5.04	6.24	8.64	10.32	60	Per doz..	18.12	18.12	22.56	30.48	36.48
18	Per doz..	5.40	5.40	6.60	9.12	10.92	72	Per doz..	21.84	21.84	27.12	36.48	43.80

60x1 1/4 inch, per doz., 60.00

72x1 1/2 inch, per doz., 108.00



Fig. 2151. Tenax, with Fused Ends, for Highest Pressures

Length Inches		External Diameter					Length Inches		External Diameter				
		1/2	5/8	3/4	7/8	1			1/2	5/8	3/4	7/8	1
10	Per doz..	3.48	4.56	5.64	7.32	9.12	20	Per doz..	7.08	9.12	11.16	14.16	18.24
11	Per doz..	3.84	4.92	6.24	7.92	10.08	21	Per doz..	7.44	9.48	11.64	14.88	19.20
12	Per doz..	4.20	5.52	6.72	8.52	10.92	22	Per doz..	7.80	10.08	12.24	15.60	20.04
13	Per doz..	4.56	5.88	7.20	9.24	11.88	23	Per doz..	8.16	10.44	12.72	16.32	21.00
14	Per doz..	4.92	6.36	7.80	9.96	12.72	24	Per doz..	8.52	10.92	13.32	17.04	21.84
15	Per doz..	5.28	6.84	8.28	10.68	13.68	30	Per doz..	10.50	13.80	16.80	21.30	27.30
16	Per doz..	5.64	7.32	8.88	11.40	14.64	36	Per doz..	12.60	16.56	20.16	25.56	32.76
17	Per doz..	6.00	7.68	9.48	12.12	15.48	48	Per doz..	16.80	22.08	26.88	34.08	43.68
18	Per doz..	6.36	8.16	10.08	12.72	16.44	60	Per doz..	21.00	27.60	33.60	42.60	54.60
19	Per doz..	6.72	8.64	10.56	13.44	17.40	72	Per doz..	25.20	33.12	40.32	51.12	65.52

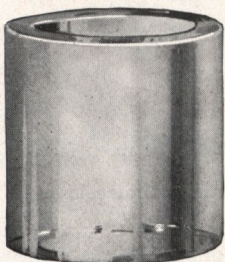


Fig. 2152

Cylindrical Glasses and Cork Washers

Price List per Dozen

Diameter.....	1	1 1/8	1 1/4	1 1/2	1 5/8	1 3/4	2	2	2 1/4	2 3/8
Height.....	7/8	1	1 1/8	1 1/2	1 5/8	1 1/2	1 3/4	1 7/8	2 1/8	2 1/2
Glasses.....	.90	1.08	1.26	1.44	1.44	1.80	2.25	2.25	2.25	2.70
Washers.....	.25	.30	.40	.45	.45	.55	.60	.60	.75	.75
Diameter.....	2 1/2	2 3/4	3	3	3 1/8	3 1/2	3 1/2	4	4	4 1/8
Height.....	2 3/8	2 1/2	3	4	2 7/8	3 1/2	4	4 1/2	4 1/4	5 1/8
Glasses.....	3.37	3.60	4.50	6.00	4.50	5.40	6.00	6.75	7.20	10.80
Washers.....	.90	.90	1.20	1.20	1.20	1.80	2.55	2.65	2.75	4.50

Ernst Protected Safety Gauge Glass

Non-Breakable

Because all the apparent causes of breakage have been eliminated, thus:

It is well protected against external injury.

It is protected from sudden temperature changes.

It is compensated against the damaging effects due to expansion and contraction.

It is impossible to get the glass out of alignment—therefore it cannot be subjected to any strains.

No part of the glass comes in contact with any metal.

The centralizing device in the upper connection discharges the condensation down the center of the glass, therefore the corrosive action is practically eliminated, hence it will not cloud up, it will not leak and the water shows red.

It fits your present gauge glass fittings. It has all advantages of other similar devices with none of their disadvantages.

The water can be seen from all sides.

The Protective Tube surrounding the glass proper can be readily removed and replaced without disturbing the glass or end connectors.

Other Advantages

Positive prevention of flying glass and injury due to escape of the scalding water.

Should a glass break, due to external violence, for instance—such as being accidentally struck by a firing tool, etc.—the escaping steam gives the necessary alarm; however the escape of the

Other Advantages

(Continued)

scalding water is instantly cut off.

The self-closing device in lower connection is always open when in its natural position, and being vertical it can not scale up or become closed in any other manner, nor does it interfere with the blowing out of the water.

The Centralizing device has the full area of the passage way in the upper nipple, therefore it cannot close up, and a false water level is impossible.

As it takes the place of your present glass, it will fit any Gauge Glass Fittings without making any change; the end nipples are the size of your glass.

It does not require Special Glasses—any standard Glass will fit into the protective frame and the water will show red just the same.

It is not necessary to have rubber washers to install this Glass—any ordinary packing will do.

Where insurance requirements demand wire protection of Gauge Glasses—we furnish a Wire Guard, which fits our standard type of Glass.

This Wire Guard is held in place by springs. The object of these springs is to produce flexibility, thus allowing the Wire Guard to respond to any sudden shock such as caused by the possibility of breakage of a glass (if an inferior quality be used).

Under ordinary conditions, however, this Wire Guard is unnecessary.

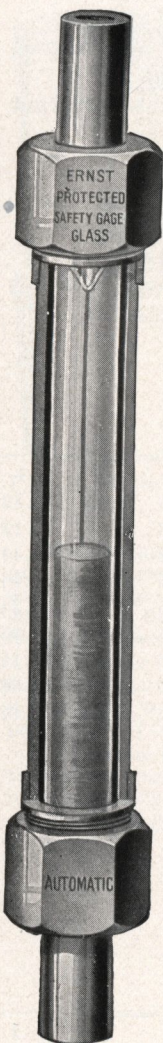


Fig. 2160
Standard Type

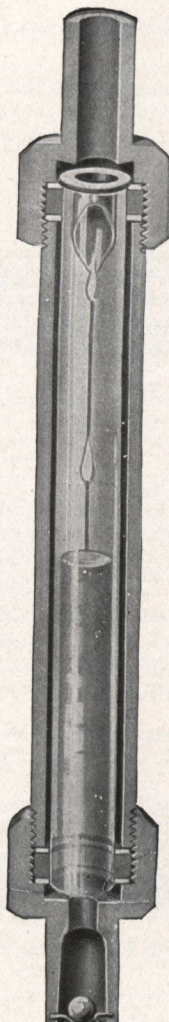


Fig. 2161
Sectional View

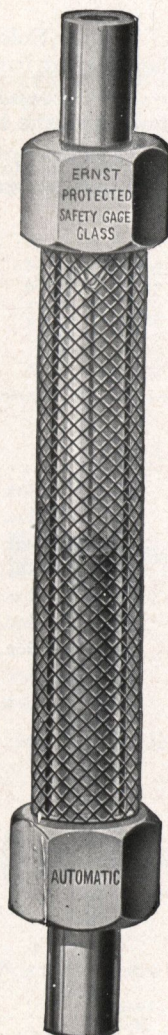


Fig. 2162
Wire Protected Type

Price List

Length.....	6	7	8	9	10	11	12	13	14	15	16	18	20	22	24	26
Each.....	6.40	6.70	7.00	7.30	7.70	8.10	8.40	8.80	9.20	9.70	10.20	10.70	11.60	12.80	14.00	16.00

Furnished any length. Intermediate sizes take the price of next higher on list.

If Wire Guards are wanted, add 10 per cent.

For special conditions where it would perhaps not be advisable to shorten the present length of view, we can furnish bronze "Adapters" into which the gauge glass fittings are screwed—a further advantage gained thereby is that the gauge glass can be turned to right, left, or in fact, any angle as may be preferred.

We can also furnish protected safety gauge glasses for ammonia and other liquids and special designs for locomotive and marine service.

High Grade Polished Bronze Gauge Glass Fittings, heavy type, 12.00 per set.

Bronze Adapters, 3.50 per set (upper and lower).

When Ordering

give dimensions indicated on diagram, as follows:

A. Diameter of present glass. B. Length of present glass. C. Distance between faces of stuffing nuts (nuts just caught on one thread). D. Height of stuffing nuts.

If Adapters or Gauge Glass Fittings are required, give the following additional dimensions:

E. Distance between centers, of boiler or water column.

F. Tapped for what size connection.

G. Distance from center of present upper Gauge Glass Fitting to face of stuffing nut, caught on one thread.

H. Same dimension of Lower Gauge Glass Fitting.

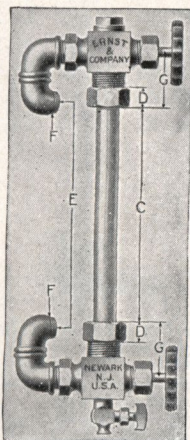


Diagram for Ordering

Gauge Glass Cutters

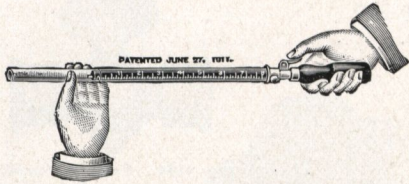


Fig. 2170. Wilkins Gauge Glass Cutter

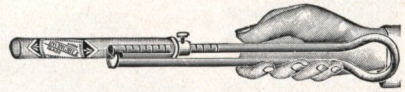


Fig. 2171. Chicago Gauge Glass Cutter

The Wilkins is generally regarded by engineers as the best type of cutter on the market. In operation a slight pressure on the thumb latch, a turn of the tube, and the cut is made. The beam is accurately graduated in eighths of an inch, 40 to 8 inches, and nickel-plated. Handle has hard rubber finish, wheels are ground sharp and tested.

Wilkins Gauge Glass Cutters

Number	1	2	3	4
Cuts tubes to, inches	8	18	24	30
Each	2.00	6.00	8.00	10.00

The Chicago is a high grade cutter of an old and standard type. The beam is graduated and the tool is nickel-plated. The cutter wheels are first quality, sharp and tough.

Price, each.60

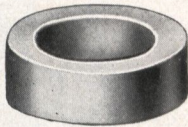


Fig. 2172. Gauge Glass Washer

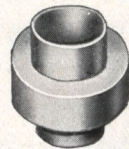


Fig. 2173. Gilbert Self-packing Washer

Gauge Glass Washers

Size	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1
Fig. 2172, Common, per dozen	.25	.25	.25	.30	.40	.60
Fig. 2173, Gilbert, per dozen	.85	.85	.85	.85	.85	.85

Ebonite gauge glass washers, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, per gross, \$1.50.



Fig. 2174. Water Gauge Guard Rod

Water Gauge Guard Rods— $\frac{3}{16}$ inch Diameter

Length, inches	12	14	16	18	20	24	30	36
Each	.09	.10	.12	.15	.20	.25	.30	.40

Longer Rods furnished at special prices.

Fusible Plugs

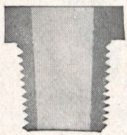


Fig. 2175. Short Pattern Inside Plug

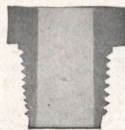


Fig. 2176. Short Pattern Outside Plug

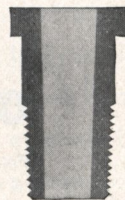


Fig. 2177. Long Pattern Inside Plug

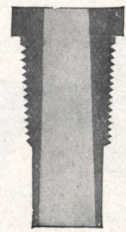


Fig. 2178. Long Pattern Outside Plug

Fusible Plugs

Size, inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Inside Types	.50	.60	.75	1.00	1.50	2.00	3.00
Outside Types	1.00	1.20	1.50	2.00	3.00	4.00	6.00

Order by Figure Number, and if for marine service orders must so state, otherwise Outside Plugs for standard service will be furnished.

Boiler Bushings

Size, inches	$1\frac{1}{2} \times 1\frac{1}{4}$	$2 \times 1\frac{1}{4}$	$2 \times 1\frac{1}{2}$	$2\frac{1}{2} \times 2$	$2\frac{1}{2} \times 2$
Length, inches	$3\frac{1}{2}$	3	$2\frac{1}{2}$	$2\frac{1}{2}$	3
Each	2.75	4.60	2.65	4.50	7.25

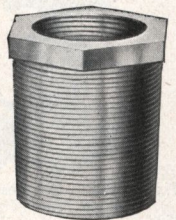


Fig. 2179
Boiler Bushing

Air and Gauge Cocks

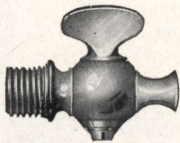


Fig. 2180. Air Cock

Size.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$
Tee Handle No.....	6	7	8	9
Each.....	.40	.45	.50	.60

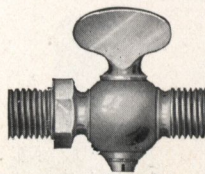


Fig. 2181. Male Thread

Size.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$
Tee Handle No.....	18	19	20	21
Each.....	.55	.65	.75	.90

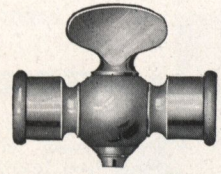


Fig. 2182. Female Thread

Size.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$
Tee Handle No.....	37	38	39	39 $\frac{1}{2}$
Each.....	.65	.70	.85	1.10

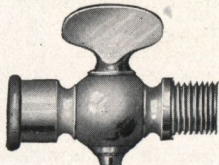


Fig. 2183. Male and Female

Size.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$
Tee Handle No.....	40	41	42	42 $\frac{1}{2}$
Each.....	.75	.80	.90	1.05

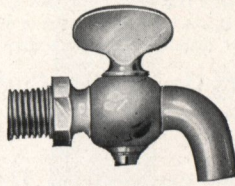


Fig. 2184. Bibb End

Size.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$
Tee Handle No.....	26	27	28	33
Each.....	.70	.80	.90	1.00

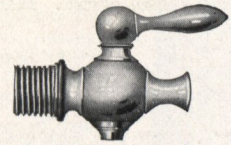


Fig. 2185. Air Cock

Size.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$
Lever Handle No.....	12	13	14	15
Each.....	.55	.60	.65	.75

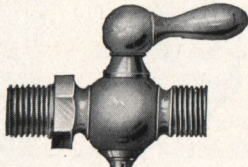


Fig. 2186. Male Thread

Size.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$
Lever Handle No.....	22	23	24	25
Each.....	.70	.80	.90	1.05

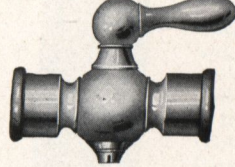


Fig. 2187. Female Thread

Size.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$
Lever Handle No.....	43	44	45	45 $\frac{1}{2}$
Each.....	.80	.85	1.00	1.25

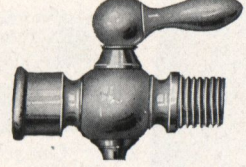


Fig. 2188. Male and Female

Size.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$
Lever Handle No.....	46	47	48	48 $\frac{1}{2}$
Each.....	90	95	1.05	1.20

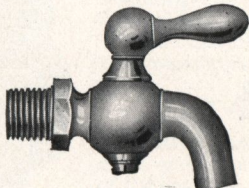


Fig. 2189. Bibb End

Size.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$
Lever Handle No.....	29	30	31	32
Each.....	.85	.95	1.05	1.15

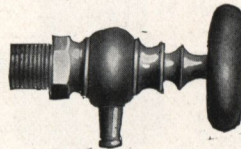


Fig. 2189A. Gauge Cock Without Stuffing Box, Finished Brass

Size.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$
Each.....	.90	.95	1.00	1.25

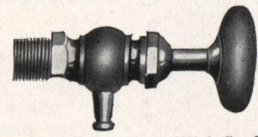


Fig. 2189B. Gauge Cock With Stuffing Box, Finished Brass

Size.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$
Each.....	1.20	1.30	1.45

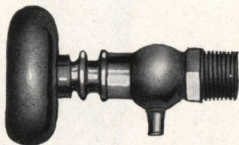


Fig. 2189C. Gauge Cock Light Weight Pattern, Without Stuffing Box For House Heating Boilers, Low Pressure

Size.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$
Each.....	.85	.90		



Fig. 2189D. "Regester" Gauge Cock

Size.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$
Each.....	.50	.55	.60

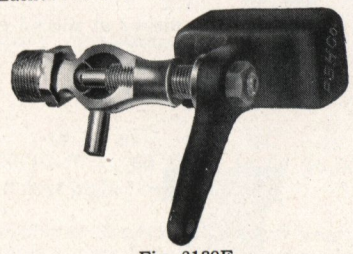


Fig. 2189E "PBH" Weighted Gauge Cock

Size.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{4}$
Each, Finished Brass.....	2.50		2.50
Each, Nickel-plated.....	3.50		3.50

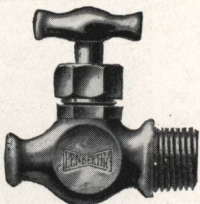


Fig. 2189K. Dripless Air Cock Single Male Thread

Size.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$
Standard.....	.40	.45	.50	.60

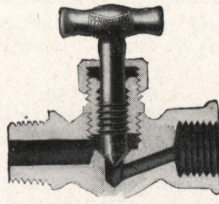


Fig. 2189T. Dripless Air Cock Male and Female

Size.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$
Standard.....	.75	.80	.90	1.15

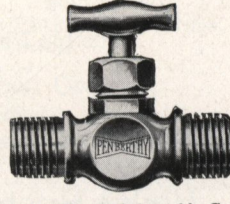


Fig. 2189W. Dripless Air Cock Double Male Thread

Size.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$
Standard.....	.55	.65	.75	.90

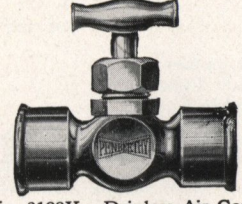


Fig. 2189Y. Dripless Air Cock Female Thread

Size.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$
Standard.....	.65	.70	.85	1.10

Note the valve design in the Dripless Cocks and the packed stem. This makes them non-leakable and insures permanent durability. Regularly furnished in Finished Brass.

The Nason-Aetna Gauge Cock

For Pressures to 250 Pounds

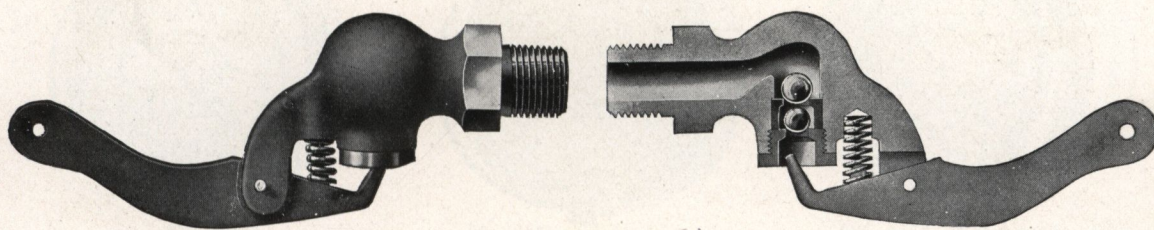


Fig. 2190. Full View

Section

The Nason-Aetna Gauge Cock

differs distinctly in its form of construction from any similar device, in that it involves the use of a regrounding ball valve, in duplicate—one above the other—presenting two independent self-closing seating surfaces to the boiler pressure.

By reason of the line contact between ball and seat, practically no surface is presented on which particles of dirt or scale may collect. If any particle of scale or foreign substance catches on the seat so as to prevent the proper seating of the valve it will be crushed or cut by the pressure between valve and limited contact area of its knife-like seat.

This feature practically removes the possibility of fouling through lodgment of scale or foreign matter on the valve seats, which, with the regrounding feature, insures a permanent valve integrity through the seating of at least one of the valves at all times, rendering the cock immune from leakage and the annoyance incident thereto.

With the “tripping” of the lever the lower ball is forced against the upper one, lifting both clear of their seats during the period of discharge or “try.” Instantly the lever is released each ball drops to its seat, effecting an automatic and positive closure against all pressures to 250 pounds.

The Nason-Aetna Self-closing Gauge Cock is small, compact, and of attractive design. It is made throughout of special steam metal composition, with bell metal balls and non-corrosive phosphor bronze seats. All parts are made to meet the most exacting service conditions and the Nason-Aetna is offered as the nearest approach to indestructibility ever attained in a gauge cock.

The Nason-Aetna Gauge Cock is effectively used with a chain or rod pull of any length required to suit the conditions. These attachments are furnished to order only, and at an extra charge, depending upon length, detail, etc. Made in two sizes as listed below.

Price List

Size.....	$\frac{1}{2}$	$\frac{3}{4}$
Rough Body, each.....	2.25	2.50
Finished, each.....	2.75	3.00
Nickel-plated, each.....	3.25	3.50

Pressure Gauges

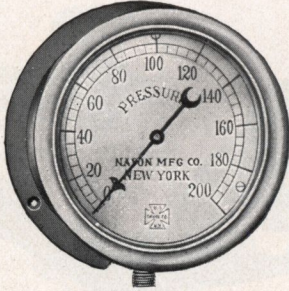


Fig. 2200
Single Spring Pressure Gauge



Fig. 2201
Low Pressure Steam Gauge

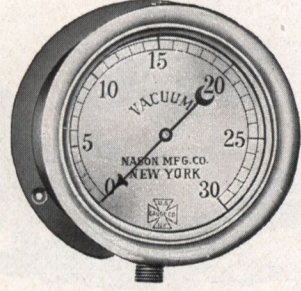


Fig. 2202
Vacuum Gauge

These Gauges have independent non-corrosive movements which are mounted direct on socket and cannot be thrown out of adjustment when Gauge is screwed into position. These Gauges are regularly furnished with bottom connection, but can be supplied with connection at back of case when so ordered. Gauges should be graduated to be about double the highest working pressure and connected with a siphon when used with steam. Can be furnished with any graduations required, but a small extra charge is made for graduations higher than 500 pounds.

Low Pressure Gauge, Fig. 2201, is designed for house-heating boilers and stock size dials are 3½, 4½ and 5 inches.

Single Spring, Low Pressure and Vacuum Gauges

Including Cock with each Gauge, 3-inch and Larger

Size	Iron Case Brass Ring	Iron Case Nickel-plated Ring	Finished Brass Case	Nickel-plated Case	Finished Brass Deep Case	Nickel-plated Deep Case	Pipe Connection
12 inch Dial	50.00	51.50	75.00	79.00	80.00	84.00	¼ inch Female
10 inch Dial	32.00	33.00	40.00	43.00	44.00	47.00	¼ inch Female
8½ inch Dial	22.00	22.75	30.00	32.50	33.50	36.00	¼ inch Female
6¾ inch Dial	16.00	16.60	20.00	22.00	23.00	25.00	¼ inch Female
6 inch Dial	13.00	13.50	16.00	17.50	.....	.....	¼ inch Male
5½ inch Dial	10.00	10.25	12.00	13.25	.....	.....	¼ inch Male
5 inch Dial	8.00	8.20	11.00	12.00	.....	.....	¼ inch Male
4½ inch Dial	8.00	8.20	10.00	11.00	.....	.....	¼ inch Male
3½ inch Dial	7.00	7.18	9.00	9.75	.....	.....	¼ inch Male
3 inch Dial	6.00	6.15	8.00	8.60	.....	.....	¼ inch Male
2½ inch Dial	6.00	6.15	8.00	8.60	.....	.....	⅜ inch Male
2 inch Dial	6.00	6.15	8.00	8.60	.....	.....	⅜ inch Male
1½ inch Dial	.....	.....	8.00	8.60	.....	.....	⅜ inch Male

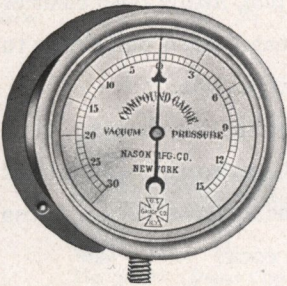


Fig. 2203. Compound Pressure
and Vacuum Gauge

Fig. 2203 Gauges have double scale, one showing pounds pressure per square inch and the other vacuum in inches. Used largely on vacuum heating systems and compound steam engines. Construction and other details as described above.

Fig. 2204 Pyrometer Steam Gauges have double scale dial, one scale showing pounds pressure per square inch and the other equivalent degrees of heat in Fahrenheit. Construction and other details as described above.

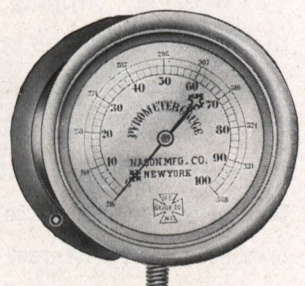


Fig. 2204
Pyrometer Steam Gauge

Pressure and Vacuum and Pyrometer Gauges

Size	Iron Case Brass Ring	Iron Case Nickel-plated Ring	Finished Brass Case	Nickel-plated Case	Finished Brass Deep Case	Nickel-plated Deep Case	Pipe Connection
12 inch Dial	60.00	61.50	80.00	84.00	85.00	89.00	¼ inch Female
10 inch Dial	40.00	41.00	50.00	53.00	54.00	57.00	¼ inch Female
8½ inch Dial	30.00	30.75	40.00	42.50	43.50	46.00	¼ inch Female
6¾ inch Dial	20.00	20.60	25.00	27.00	28.00	30.00	¼ inch Female
6 inch Dial	16.00	16.50	20.00	21.50	.....	.....	¼ inch Male
5½ inch Dial	14.00	14.25	16.00	17.25	.....	.....	¼ inch Male
5 inch Dial	14.00	14.25	16.00	17.25	.....	.....	¼ inch Male
4½ inch Dial	12.00	12.20	14.00	15.00	.....	.....	¼ inch Male
3½ inch Dial	10.00	10.18	12.00	12.75	.....	.....	¼ inch Male

Prices include Cock with each Gauge 3-inch Dial and larger.

Pressure Gauges

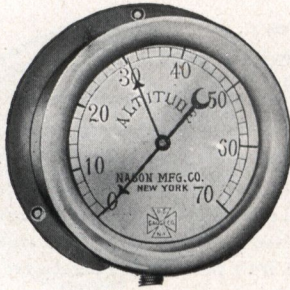


Fig. 2210
Altitude Gauge

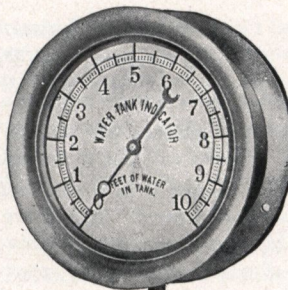


Fig. 2211. Tank Indicator
Altitude Gauge

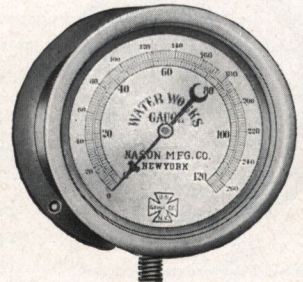


Fig. 2212. Combination Water
Pressure Gauge

Fig. 2210 Altitude Gauges are used to indicate the height of water in tanks, reservoirs, etc., also in connection with hot water heating systems. The extra hand is red, is adjustable, and is set by the user at the pressure it is desired to maintain.

Fig. 2211 Tank Indicator Altitude Gauge is adapted for use on standpipes, reservoirs, or similar installations where it is desired to have an Indicator Gauge that will show the exact height of water in feet and inches at any time.

So made that, regardless of the application, it will only register whatever may be the height of water in the tank or reservoir. This is accomplished by means of a slide adjustment of the gauge operating mechanism, whereby the difference in elevation between the location of the gauge and that of the tank is equalized. The gauge hand does not operate until the water rises above the bottom of the tank or reservoir.

In ordering, specify exact height Gauge is located below bottom of tank or reservoir and maximum height of water level in tank. Made in dial sizes $6\frac{3}{4}$, $8\frac{1}{2}$, 10 and 12 inch.

Fig. 2212 Combination Water Pressure Gauge is used to indicate the height of water in tanks, standpipes, in office buildings, waterworks, pumping stations and mines. Dials have a double scale, one showing height of water in feet and the other equivalent pressure per square inch in pounds. Standard graduations, 200 pounds and equivalent feet. Small extra charge when graduated to over 500 pounds, and equivalent feet. Sizes $4\frac{1}{2}$ to 12 inches.

Figs. 2210, 2211, 2212

Size	Iron Case Brass Ring	Iron Case Nickel-plated Ring	Finished Brass Case	Nickel-plated Case	Finished Brass Deep Case	Nickel-plated Deep Case	Pipe Connection
12 inch Dial	\$60.00	\$61.50	80.00	84.00	85.00	89.00	$\frac{1}{4}$ inch Female
10 inch Dial	40.00	41.00	50.00	53.00	54.00	57.00	$\frac{1}{4}$ inch Female
$8\frac{1}{2}$ inch Dial	30.00	30.75	40.00	42.50	43.50	46.00	$\frac{1}{4}$ inch Female
$6\frac{3}{4}$ inch Dial	20.00	20.60	25.00	27.00	28.00	30.00	$\frac{1}{4}$ inch Female
6 inch Dial	16.00	16.50	20.00	21.50	.....	.....	$\frac{1}{4}$ inch Male
$5\frac{1}{2}$ inch Dial	14.00	14.25	16.00	17.25	.....	.....	$\frac{1}{4}$ inch Male
5 inch Dial	12.00	12.20	14.00	15.00	.....	.....	$\frac{1}{4}$ inch Male
$4\frac{1}{2}$ inch Dial	12.00	12.20	14.00	15.00	.....	.....	$\frac{1}{4}$ inch Male
$3\frac{1}{2}$ inch Dial	10.00	10.18	12.00	12.75	.....	.....	$\frac{1}{4}$ inch Male

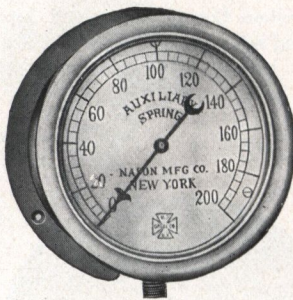


Fig. 2213
Auxiliary Spring Gauge with
Independent Non-corrosive
Movement

These Gauges are used where rapidly fluctuating pressures or unusual vibration exists, such as is found in locomotives, road rollers, traction engines, hoisting machinery and sprinkler systems.

Auxiliary springs are coiled from phosphor bronze and applied to the free end of the main springs to give stability to gauge hands and prevent undue wear to gauge movement.

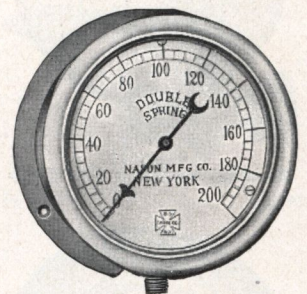


Fig. 2214
Double Spring Gauge with
Independent Non-corrosive
Movement

Figs. 2213, 2214

Size	Iron Case Brass Ring	Iron Case Nickel-plated Ring	Finished Brass Case	Nickel-plated Case	Finished Brass Deep Case	Nickel-plated Deep Case	Pipe Connection
12 inch Dial	55.00	56.50	80.00	84.00	85.00	89.00	$\frac{1}{4}$ inch Female
10 inch Dial	37.00	38.00	45.00	48.00	49.00	52.00	$\frac{1}{4}$ inch Female
$8\frac{1}{2}$ inch Dial	25.00	25.75	34.00	36.50	37.50	40.00	$\frac{1}{4}$ inch Female
$6\frac{3}{4}$ inch Dial	18.00	18.60	22.00	24.00	25.00	27.00	$\frac{1}{4}$ inch Female
6 inch Dial	15.00	15.50	18.00	19.50	.....	.....	$\frac{1}{4}$ inch Male
$5\frac{1}{2}$ inch Dial	12.00	12.25	14.00	15.25	.....	.....	$\frac{1}{4}$ inch Male
5 inch Dial	11.00	11.20	13.00	14.00	.....	.....	$\frac{1}{4}$ inch Male
$4\frac{1}{2}$ inch Dial	10.00	10.20	12.00	13.00	.....	.....	$\frac{1}{4}$ inch Male

Pressure Gauges

Ammonia Gauges
Pressure, and Pressure and Vacuum

These Gauges are made for ammonia or acids that brass will not withstand.

Standard Graduations: 300 pounds pressure and 30 inches vacuum; 150 pounds pressure and 30 inches vacuum; 30 pounds pressure only, and 150 pounds pressure only.

Regularly furnished with bottom connection, but can be made with connection at back of case when so ordered. Springs are bored from solid bar tool steel, and guaranteed not to set. Movements are non-corrosive and mounted direct on socket and cannot be thrown out of adjustment when Gauge is screwed into position. Sockets are made from forgings.

Size Dial	3 1/4	4 1/2	5	5 1/2	6	6 3/4	8	8 1/2
Iron Case, Nickel-plated Ring	25.50	25.50	30.50	30.50	35.50	40.60	45.75	45.75
Pipe Connection	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4

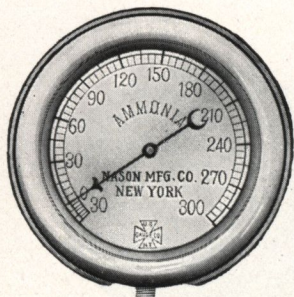


Fig. 2220
Ammonia Pressure and Vacuum Gauge

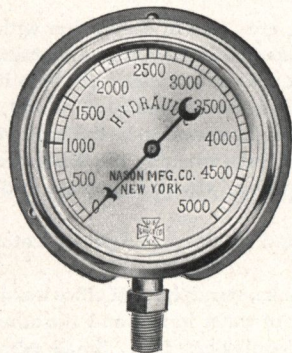


Fig. 2221
Standard Hydraulic Pressure Gauge
with Independent, Non-corrosive
Movement

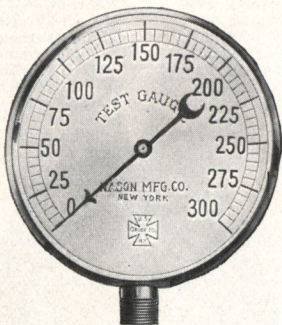


Fig. 2222
Standard Inspectors' Test Gauge

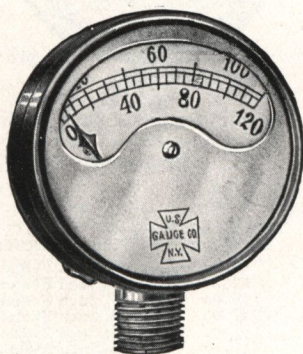


Fig. 2223
Eccentric Dial Gauge

Hydraulic Gauges

Standard Graduations: 1000, 2000, 3000, 5000 and 10,000 pounds. A small extra charge is made for graduations over 10,000 pounds.

If Gauge is required to be graduated in tons, specify diameter of ram of press. Can be made with check valve in socket at small extra charge when so ordered. Also with Maximum Hand at slight additional expense. Can be graduated in both pounds per square inch and tons on a given ram when so ordered. Pipe thread connection, all sizes, 1/2 inch.

Size	Iron Case Brass Ring	Iron Case Nickel-plated Ring	Finished Brass Case	Nickel-plated Case
12 inch Dial	110.00	111.50	125.00	129.00
10 inch Dial	90.00	91.00	100.00	103.00
8 1/2 inch Dial	70.00	70.75	80.00	82.50
6 3/4 inch Dial	50.00	50.60	60.00	62.00
6 inch Dial	35.00	35.50	40.00	41.50
5 inch Dial	30.00	30.50	35.00	36.00
4 1/2 inch Dial	25.00	25.50	30.00	31.00

Standard Inspectors' Test Gauge
With Independent Non-corrosive Movement

These Gauges are used by inspectors of steam boilers and are made as light and small as possible so that they may be easily carried in the pocket.

Movements cannot be thrown out of adjustment when Gauge is screwed into position. Glass fronts have metal covers to protect them when Gauge is not in use. Small extra charge when graduated to over 500 pounds. Standard graduations, 300 and 500 pounds. Cases are heavy cast brass.

Size	Finished Brass Case	Nickel-plated Case	Pipe Connection
3-inch Dial	14.00	14.60	1/4-inch Male

Standard Small Dial Pressure
Gauges

These Gauges have Dials 1 1/2 inches diameter and heavy stamped case, and are for use where gauges of larger diameter cannot be applied. They can be furnished with connection at back when so ordered. Standard graduations for Eccentric Dial Gauges, Fig. 2223, 60, 120, 150 and 200 pounds; Concentric Dial, Fig. 2224, 50, 80, 100, 150 and 200 pounds. Concentric should be graduated about double the working pressure, and eccentric about 25 per cent above.

Dial, inches	1 1/2
Pipe thread, inch	1/4
Finished Brass Case	8.00
Nickel-plated Case	8.60

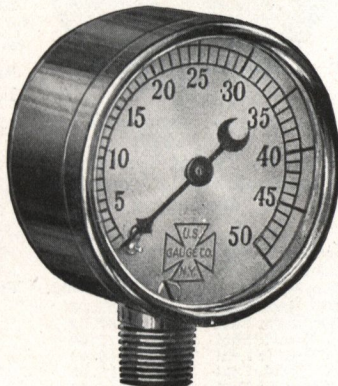


Fig. 2224
Open Concentric Dial Gauge

Automobile Pressure Gauge



Fig. 2230. Automobile Gauge with Bottom Connection

U. S. Standard Automobile Dash Board Gauges have heavy cast case and ring and are made without flange. Used to show pressures on oiling systems, self-starters and gasoline lines. Movements are non-corrosive and mounted direct on socket.

Standard connection, $\frac{1}{8}$ -inch male pipe thread at center of back case or at bottom of front of case, as ordered. Can be furnished with connection at lower part of back case if required. Glasses are beveled and fitted with elastic expansion ring to prevent breakage.

Standard Graduations: 4, 5, 6, 8, 10, 12, 16, 20, 30, 50, 60, 100, 120, 150, 200, 250 and 300 pounds. Should be graduated about double the highest working pressure.

Size Dial.....	2-inch
Finished Brass Case.....	8.00
Nickel-plated Case.....	8.60

Marine and Engine Room Clocks

These Clocks have eight-day movement and heavy cast brass case. Howard and Boston movements are full jeweled, chronometer balanced and have patent regulators. Clocks with Boston movement have regular depth of case, but can be made with deep case when ordered. Clocks with Howard or Seth Thomas movements have deep case.

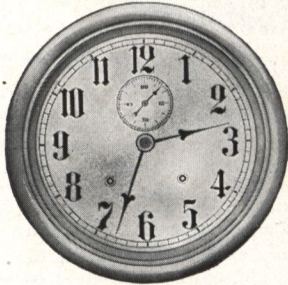


Fig. 2231. Marine or Engine Room Clock

Size	Movement	Finished Brass Case	Nickel-plated Case
12 inch Dial.....	Howard	110.00	114.00
10 inch Dial.....	Howard	90.00	93.00
8 $\frac{1}{2}$ inch Dial.....	Howard	80.00	82.50
6 $\frac{3}{4}$ inch Dial.....	Howard	70.00	72.00
12 inch Dial.....	Seth Thomas	90.00	94.00
10 inch Dial.....	Seth Thomas	65.00	68.00
8 $\frac{1}{2}$ inch Dial.....	Seth Thomas	55.00	57.50
6 $\frac{3}{4}$ inch Dial.....	Seth Thomas	45.00	47.00
12 inch Dial.....	Boston	90.00	94.00
10 inch Dial.....	Boston	65.00	68.00
8 $\frac{1}{2}$ inch Dial.....	Boston	55.00	57.50
6 $\frac{3}{4}$ inch Dial.....	Boston	45.00	47.00
6 inch Dial.....	Boston	40.00	41.50
5 $\frac{1}{2}$ inch Dial.....	Boston	38.00	39.25
5 inch Dial.....	Boston	35.00	36.00

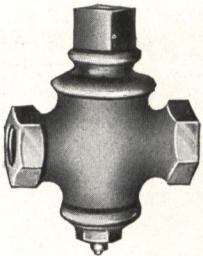


Fig. 2232
 $\frac{1}{2}$ inch..... 8.00

Hydraulic Cocks

These Cocks are designed for hydraulic pressures and are generally used for shutting off pressure from the hydraulic gauge. Where the Gauge is not equipped with a self-contained check valve these Cocks are used in conjunction with the check valves shown below.

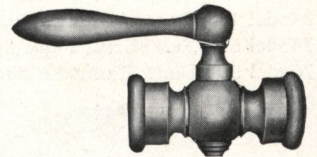


Fig. 2233
 $\frac{1}{2}$ inch..... 8.00

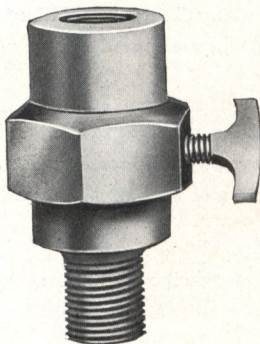


Fig. 2234. Check Valve

Hydraulic Check Valves

A Check Valve should be used in connection with every hydraulic gauge which is not equipped with a self-contained check. This affords protection against sudden pressure changes.

Fig. 2234 represents Large Pattern Hydraulic Check Valve with set screw for quick release of pressure.

Fig. 2235 represents standard or Small Pattern Hydraulic Check Valve, employing the regular automatic release.

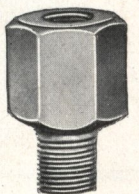


Fig. 2234. $\frac{1}{2}$ inch, each.....	8.00
Fig. 2235. $\frac{1}{2}$ inch, each.....	6.00

Fig. 2235. Hydraulic Check Valve

Recording Gauges

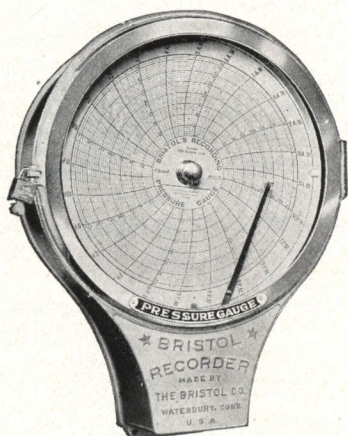


Fig. 2240. Model 10

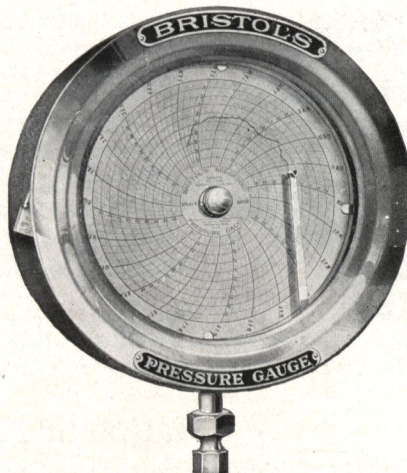


Fig. 2241. Model 52

Model 10

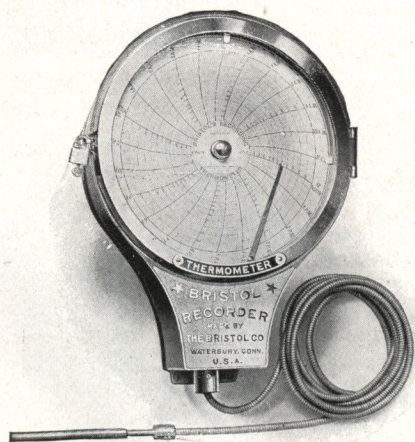
is designed for steam, air, gas and liquid pressures and can be furnished with 12-inch or 8-inch charts and for all ranges up to 12,000 pounds. There are many thousands of these gauges in daily use under conditions calling for readings in pounds, ounces, inches, feet, metric units, etc. The Bristol Gauge is unique in its extreme simplicity of construction. The recording pen arm is attached directly to the pressure tube.

Model 52

is similar to other Bristol Recording Gauges in its freedom from multiplying devices or other complicated mechanisms. The pen arm is attached direct to the patented helical pressure tube of several convolutions. Model 52 is made in round form to correspond with similar pattern indicating gauges on gauge boards, and is therefore recommended for steam pressures. This model is made only for 6-inch charts, covering total ranges of 10 pounds per square inch or higher.

Price List

Model 10	Full Nickel Finish, Pressure or Vacuum, 12-inch Chart.....	60.00
Model 10	Enamel Finish, Nickel Door only, Pressure or Vacuum, 12-inch Chart.....	55.00
Model 10	Full Nickel Finish, Pressure or Vacuum, 8-inch Chart.....	50.00
Model 10	Enamel Finish, Nickel Door only, Pressure or Vacuum, 8-inch Chart.....	45.00
Model 52	Full Nickel Finish, 6-inch Chart, for all steam pressures.....	30.00
Model 52	Black Enamel Finish, Nickel Doors only, for all steam pressures.....	25.00



Recording Thermometers

The Bristol Recording Thermometer is unique in the simplicity of its construction. It operates on the principle of the expansion of liquids, gases and vapors of liquids, and is furnished for many different conditions, with a great variety of 12, 10, 8 and 6 inch charts, covering any range of temperature from 60 to 800 degrees F.

Model No. 210 as illustrated can be furnished for use with 12-inch and 8-inch charts and many different ranges can be promptly supplied for boiler, flue gas, pasteurizers, wet steam vulcanizers, tar and asphalt stills, feed water, etc.

Prices will be quoted for these instruments on receipt of information as to application and range of temperature.

Fig. 2242
Model No. 210 Recording Thermometer

Dead Weight Pressure Gauge Testers

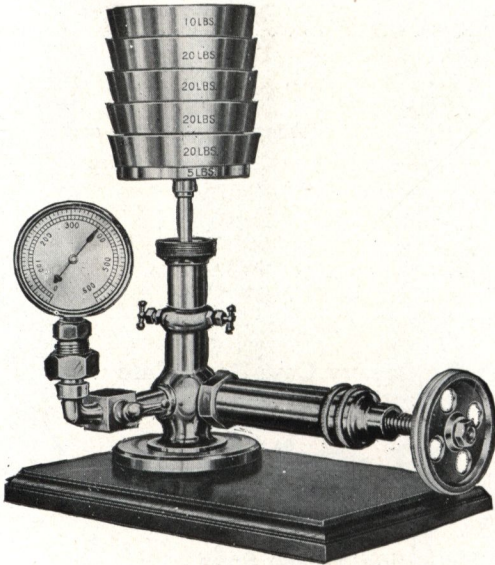


Fig. 2250. Double Area Tester

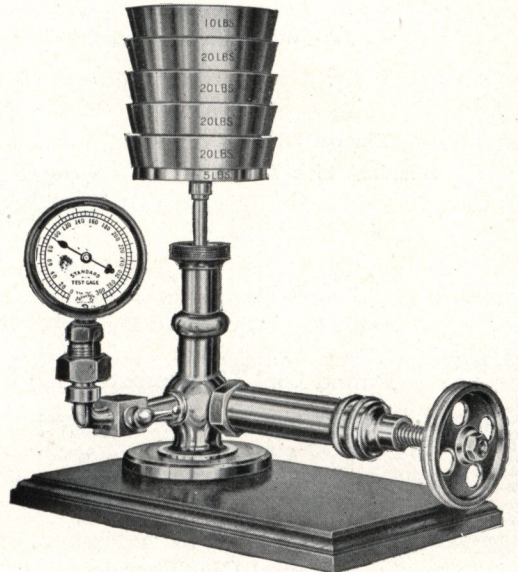


Fig. 2251. Single Area Tester

These machines offer the most improved method for obtaining an accurate testing of pressure gauges by means of weights, and are recognized and adopted as a standard for measuring pressures. They are equal in accuracy to a mercury column, as heretofore used, and are more convenient and much less expensive.

Fig. 2250 Gauge Tester has an adjustable double area piston which makes it possible to secure both low and high pressure testing up to maximum of 1000 pounds per square inch, with but one-fourth the usual number of weights. The means of adjustment, to change from the double area for low pressure work to the single area for high pressure, is embodied in two small valves placed on opposite sides of the vertical cylinder as shown. These can be regulated as desired at a moment's notice while the machine is in use.

Fig. 2251 Gauge Tester is similar to Fig. 2250, but has the ordinary form of single area piston, and is intended for lower pressures not exceeding 500 pounds per square inch. These Testers are equally durable and reliable for this service as the double area style.

Prices include complete equipment of necessary weights with tools, consisting of screwdriver, oil can, gauge hand puller, hand set and six connecting nipples for attaching gauges. They are all packed in two separate cases with substantial handles, so as to be easily carried. Prices do not include gauge shown in cut, which is used to illustrate its application.

Price List

Fig. 2250	Double Area Tester, for testing to 1000 pounds, complete.....	100.00
Fig. 2251	Single Area Tester, for testing to 500 pounds, complete.....	84.00
Fig. 2251	Single Area Tester, for testing to 300 pounds, complete.....	72.00
Fig. 2251	Single Area Tester, for testing to 200 pounds, complete.....	60.00

Steam Gauge Siphons and Gauge Hand Puller



Fig. 2252
Straight Siphon, without
Cock
Brass, each..... 1.00
Nickel-plated, each. 1.50

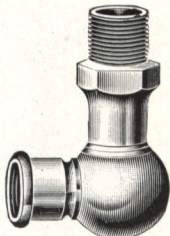


Fig. 2253
Elbow Siphon, without
Cock
Brass, each..... 1.25
Nickel-plated, each. 1.75

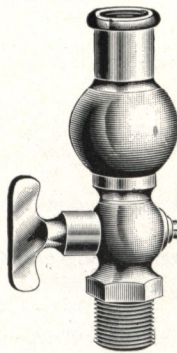


Fig. 2254
Straight Siphon, with
Cock
Brass, each..... 1.50
Nickel-plated, each. 2.00

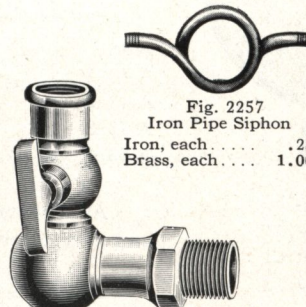


Fig. 2255
Elbow Siphon, with
Cock
Brass, each..... 1.50
Nickel-plated, each. 2.00

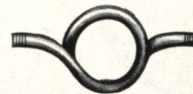


Fig. 2257
Iron Pipe Siphon
Iron, each..... .25
Brass, each.... 1.00

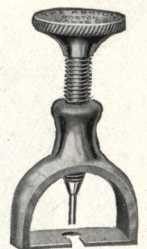
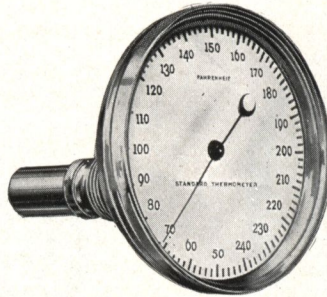


Fig. 2256
Gauge Hand Puller
Small size for Gauges up
to 8 1/2 inch; large size for
8 1/2 inch and larger.
Each..... 1.50

Round Dial Metallic Thermometers With Extension

Enamel Dial
Standard Pipe Thread



Adapted for Steam and
Hot Water Lines

Fig. 2260. Horizontal Extension Type

Round Dial Thermometers—Horizontal Extension, Heavy Cast Brass Case

No.	Diameter of Dial Inches	Pipe Thread Inch	Length of Extension Inches	Range in Degrees Fahrenheit	Price
A 42	4	$\frac{3}{4}$	2	50 to 250	10.00
A 42-1	4	$\frac{3}{4}$	2	100 to 300	10.00
A 42-2	4	$\frac{3}{4}$	2	0 to 400	10.00
A 42-3	4	$\frac{3}{4}$	2	-50 to 150	10.00
A 42-4	4	$\frac{3}{4}$	2	0 to 200	10.00

Round Dial Thermometers—Horizontal Extension, Heavy Spun Brass Case and Extension

No.	Diameter of Dial Inches	Pipe Thread Inch	Length of Extension Inches	Range in Degrees Fahrenheit	Price
10	6	1	6	0 to 400	32.00
12	6	1	6	50 to 250	30.00
13	6	1	6	-50 to 150	30.00
20	6	$\frac{3}{4}$	6	0 to 400	22.00
21	6	$\frac{3}{4}$	6	50 to 250	20.00
22	6	$\frac{3}{4}$	6	-50 to 150	20.00
30	4	$\frac{3}{4}$	6	0 to 400	22.00
31	4	$\frac{3}{4}$	6	50 to 250	20.00
32	4	$\frac{3}{4}$	6	-50 to 150	20.00
42	4	$\frac{3}{4}$	2	50 to 250	10.00
42-1	4	$\frac{3}{4}$	2	100 to 300	10.00
42-2	4	$\frac{3}{4}$	2	0 to 400	10.00
42-3	4	$\frac{3}{4}$	2	-50 to 150	10.00
42-4	4	$\frac{3}{4}$	2	0 to 200	10.00
42 B	3	$\frac{3}{4}$	2	50 to 250	10.00
44	4	$\frac{3}{4}$	$4\frac{1}{2}$	50 to 250	16.00
44-1	4	$\frac{3}{4}$	$4\frac{1}{2}$	100 to 300	16.00
44-2	4	$\frac{3}{4}$	$4\frac{1}{2}$	0 to 400	18.00
44-3	4	$\frac{3}{4}$	$4\frac{1}{2}$	-50 to 150	16.00
44-4	4	$\frac{3}{4}$	$4\frac{1}{2}$	0 to 200	16.00

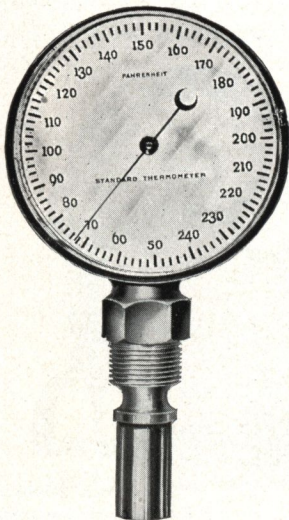


Fig. 2261
Vertical Extension Type

Round Dial Thermometers—Heavy Cast Brass Case

Vertical Extension Type

No.	Diameter of Dial, Inches	Pipe Thread Inch	Length of Extension, Inches	Range in Degrees Fahrenheit	Price
A 43	4	$\frac{3}{4}$	2	50 to 250	10.00
A 43-1	4	$\frac{3}{4}$	2	100 to 300	10.00
A 43-2	4	$\frac{3}{4}$	2	0 to 400	10.00
A 43-3	4	$\frac{3}{4}$	2	-50 to 150	10.00
A 43-4	4	$\frac{3}{4}$	2	0 to 200	10.00

All Thermometers having prefix "A" before number have heavy cast brass case cast integral with stem. Others have spun brass case and extension.

In all thermometers for mechanical uses the length of extension is measured from the end of the screw thread to the end of the lamina cover, and is the portion of the thermometer extending into the receptacle.

Always order by number.

Thermometers

These illustrations represent an exceptionally high grade line of Industrial Thermometers.

They are equipped with solid brass V-shaped case, highly polished, perfectly finished.

Scale is of dull black with prominent silvered figures and protected by glass front.

Their accuracy and dependability are fully guaranteed.

They can be furnished with three sizes of scale case, i.e., 7, 9 and 12 inch, and three types of connections, i. e., Rigid, Union and Separable Socket.

Straight forms are illustrated, but angle patterns can be furnished, as listed below.

These Thermometers can also be equipped with long stems, and irregular form connections, such as side angle, oblique angle, etc. For these special prices are quoted on specification.

List prices include any scale range not exceeding 750 degrees F.

For Scale ranges higher than 750 degrees F., but not exceeding 900 degrees F., add to list price. . . . 10.00

For ranges up to 1000 degrees, F., add to list price 20.00

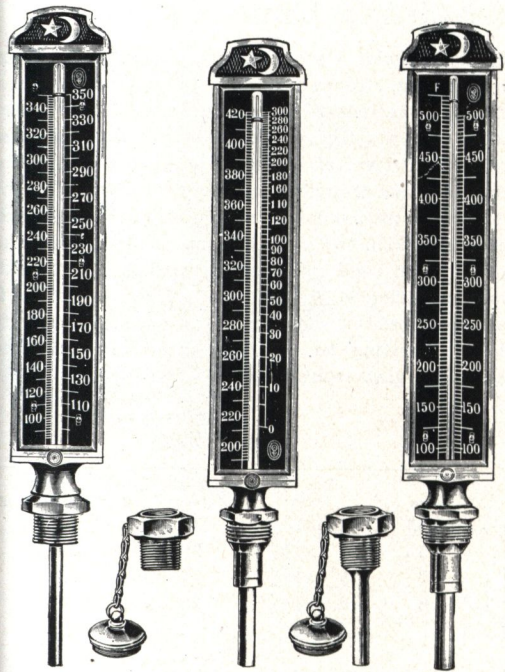


Fig. 2270 Fixed Connection Fig. 2271 Union Bushing Fig. 2272 Union Connection Fig. 2273 Separable Socket Fig. 2274 Separable Socket Connection

Price List

Straight and Angle Form, Size of Scale, inches.....	7	9	12
Pipe Thread, Straight and Angle, Fixed Connection, inches.....	3/4	3/4	1
Straight Form, Fixed Connection, each.....	12.00	14.50	18.00
Angle Form, Fixed Connection, each.....	15.00	17.50	21.00
Straight Form, Union Connection, each.....	15.00	17.50	21.00
Angle Form, Union Connection, each.....	18.00	20.50	24.00
Straight Form, Separable Socket, each.....	18.00	20.50	25.00
Angle Form, Separable Socket, each.....	21.00	23.50	28.00
Pipe Thread, Straight and Angle, Union Connection and Separable Socket, inches.....	3/4	1	1

House Heater Thermometers
For Steam and Hot Water

Cylindrical Case
Thermometers

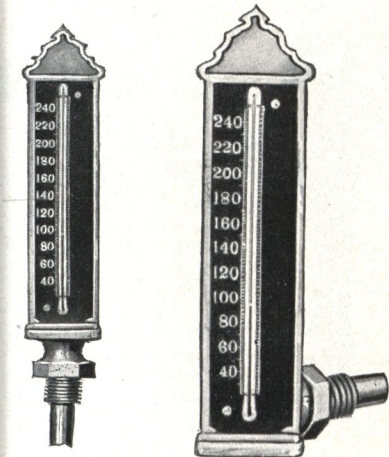


Fig. 2275 Straight House Heater Thermometer Each. . . . 2.00 Fig. 2276 Angle House Heater Thermometer Each. . . . 3.00

Our cylindrical case is a medium priced, highly finished thermometer, equipped with porcelain scale and large, easily read figures. Case is polished brass and scale can be furnished for any temperature range to 650 degrees F.

Made Straight and Angle pattern.

Length of scale approximately 8 inches; length of scale case over all, 9 inches; diameter of case, 1 inch. Connection, 3/4 inch.

Can be furnished with sliding cover to protect scale.

Straight Pattern, Plain Case.....	8.00
With Sliding Cover.....	10.00
Angle Pattern, Plain Case.....	10.00
With Sliding Cover.....	12.00

Prices include stem up to 6 inches long from Hexagon. For stem longer than 6 inch, add 2.00 to list for every additional 6 inches or fraction thereof.



Fig. 2277 Cylindrical Case Thermometer

Revolution Counters

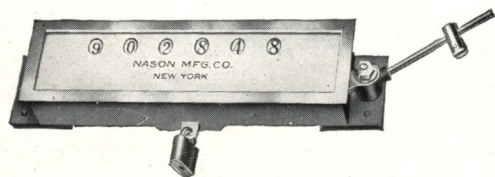


Fig. 2280. Revolution Counter

9

2

Actual size of figures for large and small counters, respectively.

A high grade Rectangular Case Counter, designed to count revolutions of engine shafts, strokes of pumps and pumping engines, as well as operations of machines. It can be arranged to register quantities in number of yards, feet, gallons or any other denomination. It is operated by a lever at the right hand side of case for registering movements of either uniform or varying stroke. Can be arranged to count rotary movement as well. Adapted for speeds up to 400 r. p. m. and made in two sizes, designated as "Large" and "Small." Equipped with and without resetting attachment. The latter allows of resetting at any time, while if the counter is without resetting attachment it must register to its full capacity before automatically resetting to zero. Furnished in enameled case, nickel-plated frame, glass front.

Large Size

No.	Size of Case	Without Zero Setting	With Zero Setting
1	7x2½	20.00	24.00
2	8x2½	24.00	28.00
3	9x2½	28.00	32.00
4	10x2½	32.00	36.00

No.	Number of Figures and Capacity
4	10,000
5	100,000
6	1,000,000
	10,000,000

Small Size

No.	Size of Case	Without Zero Setting	With Zero Setting
5	4½x1¾	17.50	21.50
6	5 x1¾	20.00	24.00
7	5½x1¾	24.00	28.00
8	6 x1¾	28.00	32.00

Engine Register

Designed for counting rotary or reciprocating motion of either uniform or varying strokes, particularly in connection with marine and pumping engines. For speeds up to 450 r. p. m. Furnished in round case, highly finished, adapting it admirably for mounting in engine rooms. Regularly equipped with lever for driving from right hand side of case. Can be made left hand at small additional cost.

Price List

Size Dial	No. Wheels	Brass Case	N. P. Case
6¾	6	60.00	62.00
8½	6	70.00	72.50
10	6	85.00	88.00
12	6	100.00	104.00
8½	8	80.00	82.50
10	8	95.00	98.00
12	8	110.00	114.00

5

Actual Size of Figure



Fig. 2281 Engine Register

Mercury Column Pressure Gauge

For indicating low pressures. Equipped with flange for mounting on wall.

Gauge must be filled with mercury until mercury column shows even with zero line.

Price List

For 3 pounds pressure....	5.00
For 5 pounds pressure....	5.00
For 7 pounds pressure....	6.00
For 10 pounds pressure....	8.00
For 15 pounds pressure....	12.00
For 20 pounds pressure....	16.00
For 25 pounds pressure....	20.00

Prices do not include mercury.

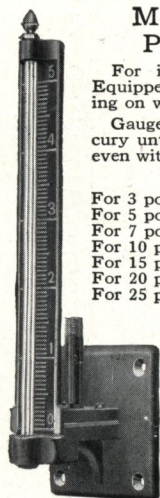


Fig. 2282 Mercury Column Pressure Gauge

Mercury Column Vacuum Gauge

A very substantial type of instrument for indicating vacuum. Fitted in polished hardwood case with glass door. Scale is equipped with zero adjusting attachment for accommodating the rise and fall of the mercury in the system when taking readings. Furnished with or without condensing vessel.

Price List

With Con. Vessel....	35.00
Without Con. Vessel...	25.00

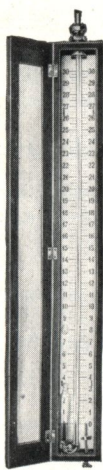


Fig. 2283 Mercury Column Vacuum Gauge

Siphon or U-Gauge

A well known type of Gauge for measuring vacuum, draft or air pressures.

Price List

4 inch scale.....	5.00
6-inch scale.....	6.00
8-inch scale.....	7.00
10-inch scale.....	9.00
12-inch scale.....	10.00
14-inch scale.....	11.00
16-inch scale.....	12.00
18-inch scale.....	13.00
20-inch scale.....	14.00
24-inch scale.....	16.00
30-inch scale.....	24.00

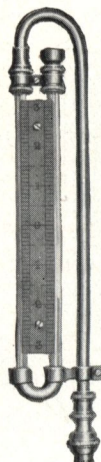
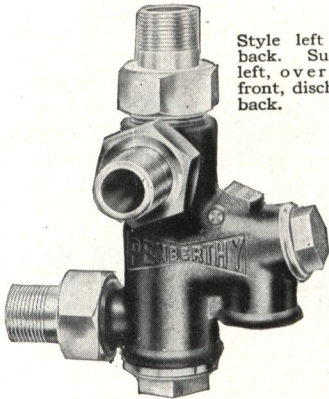
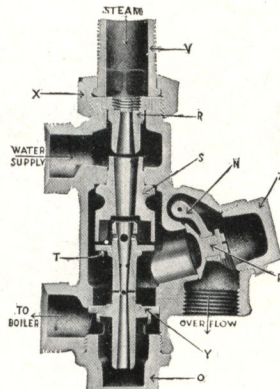
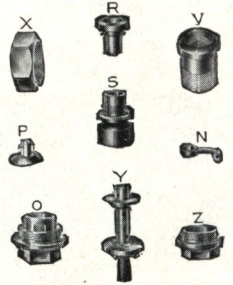


Fig. 2284 Siphon or U-Gauge

Penberthy Automatic Injectors

Fig. 2290
Stock PatternFig. 2291
Section

R-Steam Jet. V-Tail Pipe
S-Suction " X-Coupling Nut
Y-Delivery " Z-Overflow Cap
O-Plug " P- " Valve
N- " Hinge

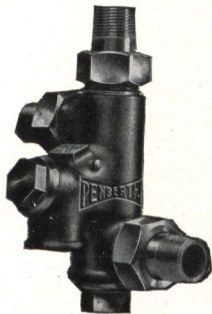
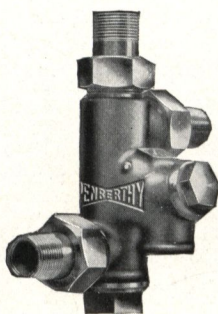
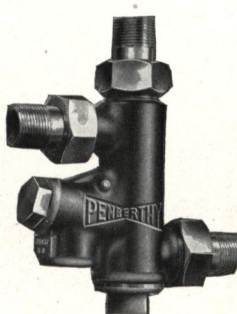
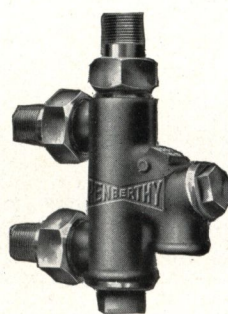
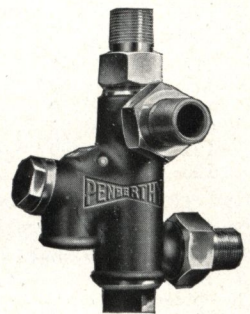
Fig. 2292
Repairs

Penberthy Automatic Injectors

Size	Price Each	Horse-power Based on Ordinary Tub. Boiler	Horse-power Based on 30 lbs. Water per H. P. per Hour	Pipe Connection Inches	Capacity per Hour, 1 to 3 feet lift, 60 to 110 pounds Steam Pressure		Shipping Weight, Boxed Lbs. Oz.	
					Maximum Gallons	Minimum Gallons		
O	15.00	3 to 6	4 to 8	1/4	60	35	2	5
OO	16.00	4 to 8	6 to 12	3/8	80	45	2	9
A	18.00	8 to 16	10 to 20	1/2	135	70	3	8
AA	20.00	12 to 22	15 to 30	1/2	180	100	3	8
B	25.00	17 to 32	22 to 45	3/4	260	140	5	6
BB	30.00	20 to 45	25 to 60	3/4	360	180	5	6
C	40.00	40 to 65	45 to 80	1	475	250	8	0
CC	45.00	45 to 80	50 to 100	1	600	325	8	0
D	55.00	50 to 100	60 to 135	1 1/4	800	425	12	0
DD	60.00	75 to 135	85 to 165	1 1/4	1000	525	12	0
E	75.00	100 to 180	125 to 235	1 1/2	1400	740	25	0
EE	90.00	115 to 255	150 to 320	1 1/2	1900	850	25	0
F	110.00	160 to 320	200 to 400	2	2400	1275	37	9
FF	125.00	200 to 400	250 to 500	2	3000	1600	39	0
G	150.00	300 to 500	325 to 600	2 1/2	3600	1875	75	0
GG	200.00	375 to 600	400 to 750	2 1/2	4200	2150	75	0

N. B.—Where Injectors are ordered by size connections we always send the size having the larger capacity. Order by letter as in "Size" column of table.

Injectors can be furnished with special connections as shown below. Stock pattern Fig. 2290 will be sent unless otherwise specified.

Fig. 2293
Left and RightFig. 2294
Right and LeftFig. 2295
Front and BackFig. 2296
Back and BackFig. 2297
Right and Back

Price List of Repair Parts

	O or OO	A or AA	B or BB	C or CC	D or DD	E	EE	F	FF	G or GG
R—Steam Jet.....	.25	.35	.45	.55	.65	.75	.75	.85	1.00	2.00
S—Suction Jet.....	.25	.35	.45	.55	.65	.75	.75	.85	1.00	3.00
Y—Delivery Jet.....	1.25	1.50	2.00	2.50	3.00	3.75	4.50	5.50	6.50	9.00
X—Coupling Nut.....	.25	.30	.40	.50	.60	1.25	1.25	1.50	1.50	2.00
V—Tail Pipe.....	.25	.30	.40	.50	.60	.80	.80	1.00	1.00	1.25
Z—Overflow Cap.....	.30	.40	.50	.60	.70	.80	.80	.90	.90	1.50
P—Overflow Valve.....	.40	.50	.60	.75	.90	1.00	1.10	1.25	1.25	1.75
N—Overflow Hinge.....	.10	.10	.15	.15	.15	.20	.20	.20	.20	.30
O—Plug.....	.60	.80	1.00	1.25	1.50	1.75	1.75	2.00	2.00	4.00
Strainer.....	.40	.45	.50	.55	.60	.75	.75	1.00	1.00	1.50

In ordering Injector parts do not fail to send the serial number and letter, which will be found on top of the overflow.

Penberthy Auto-Positive Injector

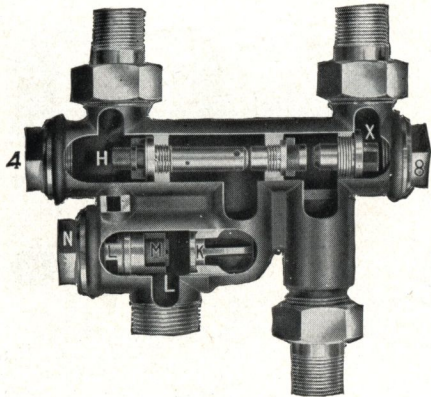


Fig. 2300. Interior View

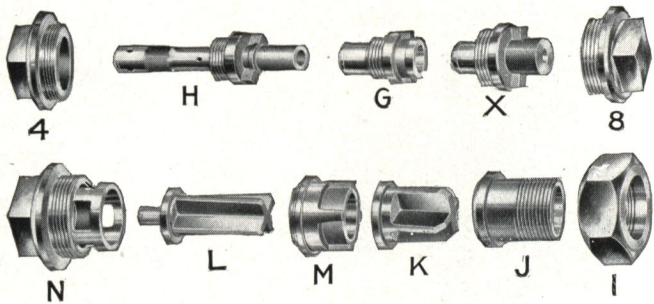


Fig. 2301. Parts or Repairs

Auto-Positive Injector

While a large majority of boilers carry less than 150 pounds pressure, the usual high working pressure of the ordinary automatic Injector, there is an increased demand for an Injector operating between 150 and 200 pounds pressure. There is also a demand for an Injector that will handle a water supply that has become heated by use of the siphon (or Ejector) and in other ways, and is consequently too hot for Injectors of the usual automatic type. We offer to the public the "Auto-positive," especially designed to meet these requirements.

This Injector differs materially from any other automatic Injector ever before placed on the market, being constructed on new principles, having but five working parts, and combining the features of a positive with those of an automatic Injector. By this combination it is enabled to handle much hotter water and work on higher steam pressures than any other automatic Injector.

It Will Handle a Hot Water Supply as follows:

130° to 135° Fahr., according to conditions, at.....	75 to 100 pounds steam pressure
125° to 130° Fahr., according to conditions, at.....	50 to 120 pounds steam pressure
110° to 115° Fahr., according to conditions, at.....	35 to 150 pounds steam pressure
90° to 95° Fahr., according to conditions, at.....	28 to 175 pounds steam pressure
Under 60°, 30 to 225 pounds	Under 40°, 35 to 240 pounds

Vertical Lift.—It lifts from 3 feet at 200 pounds pressure to 20 to 23 feet between the pressure 65 and 120 pounds.

Price List Auto-Positive Injector—Screwed or Flanged

Size	Price Each	Pipe Connections			Capacity in Gallons per Hour 75 to 125 Pounds Steam 3-foot Lift		Horse-power, Allowing 7½ to 8 Gallons per Horse-power per Hour	Weight, Each Boxed	
		Steam	Suction	Delivery	Maximum	Minimum		Lbs.	Oz.
112	18.00	3/8	3/8	3/8	120	40	5 to 15	5	0
113	20.00	1/2	1/2	1/2	200	60	7 to 25	6	8
115	30.00	3/4	3/4	3/4	400	130	16 to 50	9	0
117	45.00	1	1	1	675	225	28 to 85	13	4
119	60.00	1¼	1¼	1¼	1125	375	47 to 145	20	0
121	90.00	1½	1½	1½	2000	700	87 to 265	30	8
123	125.00	2	2	2	3000	1000	125 to 400	50	8
125	200.00	2½	2½	2½	4200	1500	200 to 600	59	2

Price List for Repairs

Size Number	{	Screwed	112	113	115	117	119	121	123	125
		Flanged	152	153	155	157	159	161	163	165
8—Steam Plug			.70	.80	.80	.90	1.10	1.40	1.70	2.50
X—Steam Jet			.40	.50	.60	.75	.90	1.00	1.20	2.00
G—Suction Jet			.30	.40	.50	.60	.75	.85	1.00	1.50
H—Delivery Jet			.90	1.00	1.50	2.00	3.00	4.00	5.50	8.00
4—Delivery Plug			.60	.70	.80	.90	1.10	1.40	1.70	2.50
N—Overflow Plug			.75	.80	1.00	1.25	1.50	1.75	2.00	3.00
L—Pressure Valve			.25	.30	.45	.60	.75	1.00	1.25	2.00
M—Pressure Valve Collar			.30	.40	.60	.90	1.25	1.75	2.25	3.00
K—Vacuum Valve			.25	.30	.45	.60	.75	1.00	1.25	1.75
*I—Coupling Nut			.25	.30	.40	.50	.60	1.25	1.50	2.00
*J—Tail Pipe			.25	.30	.40	.50	.60	.80	1.00	1.25
Strainer			.40	.45	.50	.55	.60	.75	1.00	1.50
Tool for removing Jets			.45	.50	.60	.70	.80	.90	1.00	1.50
†K-2—Valve and Guide			.70	.80	1.00	1.20	1.80	2.20	3.40	4.40

Size 152 is special. Sizes 153 and 227-8 are the same. Others follow in their consecutive order.

*These parts are not used on Flanged Injectors.

†Used in Flanged Injectors only.

Metropolitan Automatic Injector—Model N

Sizes	Prices Model N	Size of all Pipe Connections	Size Overflow or Waste Pipe	Capacity with 80 Pounds Steam Pressure 2-foot Lift Gallons	Horse-power for the Ordinary Type of Boiler and Engine	Horse-power on a Basis of 30 Pounds Evaporation per Horse- Power per Hour
2	15.00	$\frac{3}{8}$	$\frac{3}{8}$	60	4 to 6	5 to 8
3	16.00	$\frac{3}{8}$	$\frac{3}{8}$	80	6 to 8	8 to 12
$3\frac{1}{2}$	18.00	$\frac{1}{2}$	$\frac{3}{8}$	120	8 to 15	12 to 20
4	20.00	$\frac{1}{2}$	$\frac{3}{8}$	165	15 to 20	20 to 28
5	25.00	$\frac{3}{4}$	1	250	20 to 30	28 to 40
6	30.00	$\frac{3}{4}$	1	350	30 to 45	40 to 55
7	40.00	1	$1\frac{1}{4}$	500	45 to 65	55 to 80
8	45.00	1	$1\frac{1}{4}$	600	65 to 80	80 to 110
9	55.00	$1\frac{1}{4}$	$1\frac{1}{2}$	800	80 to 100	110 to 145
10	60.00	$1\frac{1}{4}$	$1\frac{1}{2}$	1000	100 to 130	145 to 180
11	75.00	$1\frac{1}{2}$	2	1300	130 to 170	180 to 235
12	90.00	$1\frac{1}{2}$	2	1750	170 to 230	235 to 300
13	110.00	2	$2\frac{1}{2}$	2300	230 to 300	300 to 400
14	125.00	2	$2\frac{1}{2}$	2850	300 to 375	400 to 500

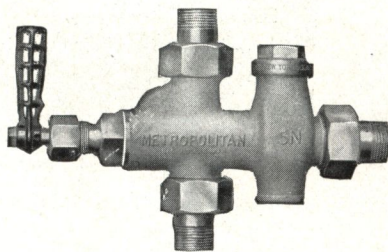


Fig. 2310. Model N
Metropolitan Automatic Injector

The Korting Universal Double Tube Injector

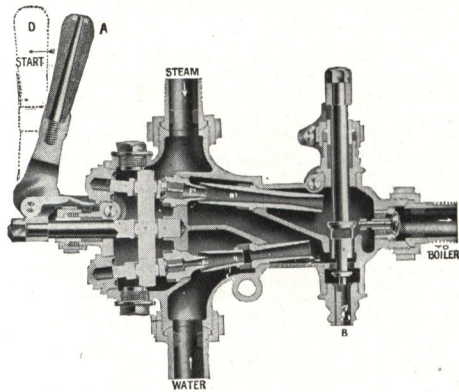


Fig. 2311
Korting Double Tube Injector

Working to best advantage under all conditions.
Take water at a temperature of 150 degrees Fahrenheit.
Stop and start by one movement of a lever.

Size No.	Price	Size of Iron Pipe	Steam 50 lbs. Gals.	H. P.	Steam 100 lbs. Gals.	H. P.	Steam 150 lbs. Gals.	H. P.	Size of Copper Pipe O.D.
0	21.00	$\frac{1}{4}$	83	17	101	20	112	22	$\frac{3}{8}$
1	23.00	$\frac{3}{8}$	112	23	143	30	180	36	$\frac{1}{2}$
2	28.00	$\frac{1}{2}$	172	35	210	40	232	46	$\frac{5}{8}$
3	38.00	$\frac{3}{4}$	278	56	338	70	397	80	$\frac{7}{8}$
$3\frac{1}{2}$	38.00	$\frac{3}{4}$	398	80	472	95	547	110	$\frac{7}{8}$
4	50.00	1	533	108	622	125	720	150	$1\frac{1}{8}$
5	60.00	$1\frac{1}{4}$	675	136	802	160	922	190	$1\frac{1}{2}$
6	60.00	$1\frac{1}{4}$	825	165	990	200	1125	230	$1\frac{1}{2}$
7	85.00	$1\frac{1}{2}$	1072	215	1372	280	1612	320	$1\frac{3}{4}$
8	85.00	$1\frac{1}{2}$	1388	280	1800	360	2115	430	$1\frac{3}{4}$
9	120.00	2	1688	340	2100	420	2475	500	$2\frac{1}{4}$
10	120.00	2	2025	400	2438	500	2850	570	$2\frac{1}{4}$
12	165.00	$2\frac{1}{2}$	3000	600	3638	750	4252	850	$2\frac{3}{4}$
14	250.00	3	3867	780	4635	930	5500	1100	$3\frac{1}{4}$
16	250.00	3	5025	1000	6075	1200	7000	1400	$3\frac{1}{4}$
20	450.00	4	9000	1800	10840	2200	12525	2500	$4\frac{1}{4}$

The horse-power in above table is based on about 5 gallons per horse-power, which is 30 per cent. in excess of the corresponding boiler horse-power. For intermediate capacities, and also if suction exceeds 10 feet vertical, select next larger size of injector. No 4 and larger can be furnished flanged. Quoted on specification.

Hancock Inspirator—Stationary Type

Designed and constructed to meet every requirement and condition found in the high pressure power plant. It will work under very high or very low pressures. It will handle hot water. Will take water under a head and lift it 25 feet. Will start with 15 pounds steam pressure and work without adjustment up to 240 pounds.



Fig. 2312

Size	Prices "Stationary" Type	Pipe Connections Suction and Delivery			Capacity per Hour with 60 Pounds Steam Pressure Gallons	Horse-power for the Ordinary Type of Boiler and Engine	Horse-power on a Basis of 30 Pounds Evapora- tion per Horse- Power per Hour
$7\frac{1}{2}$	16.00	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{4}$	60	4 to 6	5 to 8
$8\frac{3}{4}$	18.00	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{8}$	90	6 to 8	8 to 15
10	20.00	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{8}$	120	8 to 15	15 to 25
$12\frac{1}{2}$	25.00	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{2}$	220	15 to 30	25 to 35
15	30.00	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{2}$	300	30 to 40	35 to 60
$17\frac{1}{2}$	40.00	$\frac{3}{4}$	1	$\frac{3}{4}$	420	40 to 60	60 to 75
20	45.00	$\frac{3}{4}$	1	$\frac{3}{4}$	540	60 to 75	75 to 100
$22\frac{1}{2}$	55.00	1	$1\frac{1}{4}$	1	720	75 to 90	100 to 130
25	60.00	1	$1\frac{1}{4}$	1	900	90 to 120	130 to 175
30	75.00	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{1}{4}$	1260	120 to 165	175 to 235
35	90.00	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{1}{4}$	1740	165 to 230	235 to 300
40	110.00	$1\frac{1}{2}$	2	$1\frac{1}{2}$	2230	230 to 300	300 to 400
45	125.00	$1\frac{1}{2}$	2	$1\frac{1}{2}$	2820	300 to 375	400 to 500
50	150.00	2	$2\frac{1}{2}$	2	3480	375 to 500	500 to 650
55	175.00	2	$2\frac{1}{2}$	2	3650	500 to 600	650 to 700

Monitor Injectors—Lifting and Non-Lifting

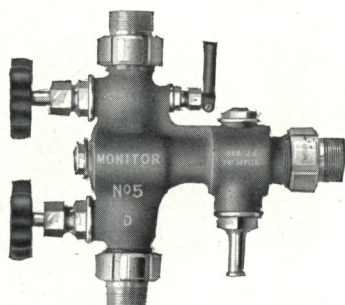


Fig. 2320
Class D, Lifting

For Portable, Stationary
and
Marine Boilers

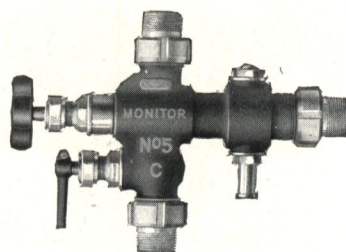


Fig. 2321
Class C, Non-Lifting

Monitor Injectors

These Injectors are capable of being worked down to half their capacity or less, by regulating with water valve only. They are well adapted to feed batteries of boilers where all may, or may not, be required to be operated at the same time. They are also peculiarly fitted to supply boilers of portable and traction engines, and all other boilers where, from jarring or unsteady conditions under which they are required to work, ordinary injectors would break and fail to do their duty. They have fixed nozzles, and no movable parts to get out of order.

Class D—Lifting, is applied only when water to feed boilers is taken from rivers, ponds, reservoirs, wells, etc., where there is no head of water; and will raise water, according to steam pressure, from 6 to 25 feet and put same in boiler.

Class C—Non-Lifting, is applied in all cases where there is a head of water, or pressure from hydrant, dam or reservoir. This class of Injector should be placed below the level of the water supply, and if needed can be made so as to work at less than 10 pounds steam pressure.

Size No.	Pipe Size	Delivery per Hour in Gallons at Steam Pressure of		For Ordinary Type of Boiler and Engine	On Basis of 30 Pounds Evaporation per Horse-power per Hour	Class D Monitor Lifting	Class C Monitor Non-Lifting
		100 Pounds	175 Pounds				
2	1/2	160	180	12- 20	15- 25	19.00	17.00
2 1/2	1/2	240	270	20- 30	25- 40	24.00	21.00
3	3/4	350	390	30- 45	40- 60	32.00	27.00
4	1	580	660	45- 75	60-100	45.00	40.00
5	1 1/4	840	950	75-110	100-140	55.00	50.00
6	1 1/4	1150	1300	110-150	140-200	65.00	60.00
7	1 1/2	1530	1730	150-200	200-260	80.00	75.00
8	1 1/2	1970	2230	200-250	260-330	100.00	90.00
9	2	2440	2760	250-310	330-410	120.00	110.00
10	2	3000	3390	310-380	410-510	140.00	130.00
12	2 1/2	4010	4530	380-510	510-680	180.00	160.00
14	2 1/2	5660	6390	510-720	680-960	225.00	200.00

Simplex Injector

Self-Regulating, Restarting—For Stationary and Marine Boilers

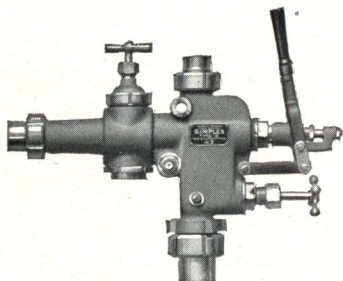


Fig. 2322
Simplex Re-Starting
Injector

No.	Steam	Suction	Delivery	Delivery in Gallons per Hour at Steam Pressure		On Basis of 30 Pounds Evaporation per Horse-power per Hour	Price
				100 lbs.	175 lbs.		
5	1 1/4	1 1/4	1 1/4	1000	1110	125- 170	75.00
6	1 1/4	1 1/4	1 1/4	1300	1440	170- 220	90.00
7	1 1/2	1 1/2	1 1/2	1750	1950	220- 290	110.00
8	1 1/2	2	2	2300	2550	290- 380	125.00
9	1 1/2	2 1/2	2	2910	3240	380- 480	140.00
10	2	2 1/2	2	3400	3780	480- 580	160.00
11	2	3	2	3940	4380	580- 680	190.00
12	2	3	2	4680	5200	680- 780	220.00
13	2 1/2	3	2 1/2	5220	5800	780- 880	250.00
14	2 1/2	3	2 1/2	6840	7600	880-1130	280.00

This type of Injector meets the most severe requirements of modern practice. It is simply constructed and contains only a few operating parts. It is self-regulating, that is, after being started at the highest operating pressure, the latter may drop down to about 40 pounds, before there is any waste at the overflow. It is also restarting, that is, if from any cause the supply of water should be temporarily interrupted, the Injector restarts automatically as soon as the water supply is restored. The reducing capacity is 50 per cent. of the maximum capacity under ordinary variations of lift and feed water temperatures.

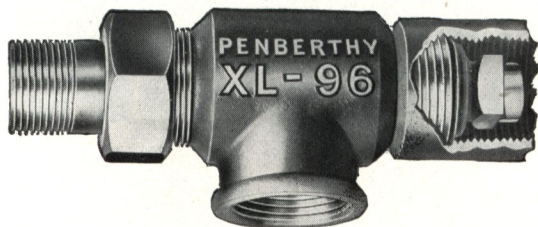
"XL-96" Improved Ejector, Siphon or Steam Jet Pump

Fig. 2330. XL-96 Ejector

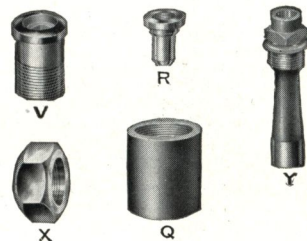


Fig. 2331. Parts or Repairs

"XL-96" Ejector

The lifting and elevating power is so combined in the XL-96 Ejector as to make it unquestionably the best device of its kind. Other ejectors which will lift 20 feet will elevate but 20 to 25 feet additional, and this only on very limited steam pressures, and it is therefore necessary to locate them within a few inches of the surface of water and operate with excessive steam pressure if it is desired to transfer water any great distance vertically.

While the composition used in the regular stock XL-96 Ejector is very efficient against the milder solutions containing acids, we make this Ejector of special anti-acid compositions which will oppose the action of acids as far as it is possible for metal to do. There is a small extra charge for these Ejectors.

Ejectors are used to remove and transfer all kinds of fluids in chemical works and other manufacturing plants, and can be also utilized for transferring gasoline and oil.

Price List "XL-96" Ejector

Size Number	1	2	3	4	5	6	7*	8*	9*	10*
All Brass, each	8.00	10.00	15.00	20.00	25.00	35.00	50.00	70.00	105.00	145.00
Iron Body, Brass Jets, each	†	†	†	†	20.00	27.50	40.00	50.00	70.00	95.00
Pipe Connection Steam	3/8	1/2	3/4	1	1	1 1/4	1 1/2	2	2	2 1/2
Pipe Connection Suction and Delivery	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Capacity per Hour										
40 to 65 Pounds Steam 3 Feet Lift, gallons	240	500	840	1350	1950	3500	5700	9500	13,600	18,400
20 to 40 Pounds or 65 to 100 Pounds, gallons	235	450	700	1300	1850	3000	4350	8160	12,400	17,100
40 to 65 Pounds, 50 Feet Elevation, gallons	120	250	420	650	975	1750	2500	4750	6,800	9,200
40 to 65 Pounds, 25 Feet Elevation, gallons	180	375	625	950	1450	2600	3750	7200	10,200	13,800
Vertical Lift										
40 to 75 Pounds steam, feet	23	25	25	25	25	25	25	25	25	25
25 to 40 or 75 to 100 Pounds, feet	20	22	22	22	22	22	22	22	22	22

When ordering Ejectors specify our number.

Sizes 5 and 6 will be sent in all brass unless ordered with iron body and brass jets and steam connection.

*Unless ordered in brass, sizes 7 to 10 inclusive will be shipped with iron body, brass jets and steam connection.

†Sizes 1 to 4 made in All Brass only.

The jets in all sizes are made of a special hard metal, insuring good wearing qualities.

In ordering by size of connection specify suction and discharge, not steam connection.

When Ejector is lifting 10 feet or over, we advise that the suction pipe be one size larger than the suction connection of Ejector, enlarging close to Ejector. A foot valve should be also used on deep lifts.

When Ejector is elevating more than 20 feet, the discharge pipe should be one size larger than coupling on Ejector, enlarging close to Ejector.

Large Capacity Ejector

We can also furnish a special large capacity Ejector designed for high lifts and steam pressures of 150 lbs. and up, which will give results as listed in the following table.

Capacities are based on 100 to 175 lbs. steam pressure with a 10-foot lift.

Large Capacity Ejector Numbers	41	42	43	44	45	46	47	48	49	50
Gallons per Hour at 150 Pounds Steam Pressure	300	650	1000	1650	2400	4400	7000	12,000	16,000	22,000

For Price List, see above. Size No. 1 corresponds to No. 41, No. 2 to No. 42, No. 3 to No. 43, etc.

Price List of Parts

Size Number	1	2	3	4	5	6	7	8	9	10
R—Steam Jet	.25	.35	.45	.55	.60	.80	1.00	1.25	1.50	2.00
Y—Delivery Jet	.80	1.00	1.25	1.50	1.75	2.50	4.00	6.00	8.00	10.00
V—Tail Pipe Brass	.25	.30	.40	.50	.50	.60	.80	1.00	1.00	1.25
X—Coupling Nut Brass	.25	.30	.40	.50	.50	.60	1.25	1.50	1.50	2.00
Strainer	.45	.50	.55	.60	.75	1.00	1.50	...	...	...
Q—Regular I. P. Coupling	...	...	...	..	...	...	...	...	...	...

Ejectors are shipped without strainers. We can furnish them where desired up to No. 7, as per list above, which is subject to discount. Strainers for larger sizes are unnecessary.

Penberthy Hydraulic Ejector

The demand for an Ejector operated by water as a motive power has necessitated the development of the Ejector shown in the above cut. It is designed to meet conditions where the water pressure operating the same is from 15 to 200 pounds and the elevation or discharge does not exceed 50 feet. All details are proportioned to give the highest efficiency under these conditions, with a minimum operating water consumption.

Water consumption varies according to pressure, capacity, and elevation. The water pressure controls the elevation, but it is safe to figure three to four pounds of pressure to every foot of elevation according to the installation of the piping. The table below shows capacities under different pressures.

N. B.—Our regular XL-96 Ejector will work under limited conditions with water as a motive power, but is designed to be operated by steam.

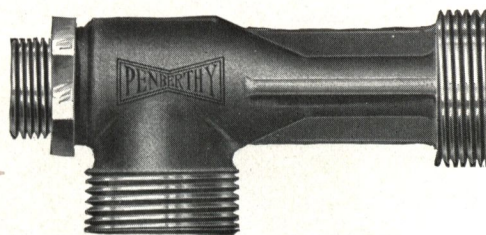


Fig. 2340
Hydraulic Ejector

Price List and Table of Capacities

Size	62	63	64	65	66	67	68
Operating, inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Suction, inches	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Delivery, inches	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Length, inches	5	$6\frac{3}{4}$	8	9	$10\frac{1}{2}$	$11\frac{1}{2}$	$13\frac{1}{4}$
Capacity in Gallons per Hour, 25 to 40 Pounds Pressure	500	900	1500	2100	3000	4200	6000
Capacity in Gallons per Hour, 60 to 80 Pounds Pressure	750	1100	2000	3400	4500	6000	9000
Each	10.00	15.00	20.00	25.00	35.00	50.00	70.00



Fig. 2341. Model C

Model C Ejector

Sizes	Price	Steam	Suction and Delivery	Capacity per Hour with 50 Pounds Steam Pressure. Gallons
1 Brass	8.00	$\frac{3}{8}$	$\frac{1}{2}$	250
2 Brass	10.00	$\frac{1}{2}$	$\frac{3}{4}$	500
3 Brass	15.00	$\frac{3}{4}$	1	960
4 Brass	20.00	1	$1\frac{1}{4}$	1300
5 Brass	25.00	$1\frac{1}{4}$	$1\frac{1}{2}$	2000
6 Iron	35.00	$1\frac{1}{4}$	2	4000
7 Iron	45.00	$1\frac{1}{2}$	$2\frac{1}{2}$	8000
8 Iron	55.00	2	3	11000
9 Iron	70.00	$2\frac{1}{2}$	4	15000
10 Iron	175.00	4	6	45000

To operate, open the valve in the steam pipe. As the Ejector will discharge the greatest quantity of water with about 60 pounds steam pressure it is desirable, when higher pressures are used, to throttle the steam valve so as to reduce the steam pressure at the Ejector.

The capacities given in the above list are when lifting 4 feet and elevating 4 feet—water cold. The capacity of all Ejectors is decreased when the lift is increased or the temperature of water increased.

Hancock Ejector

Size	Pipe Connections		Capacity per Hour Steam Pressure 60 Pounds Gallons	Price
	Steam Inches	Suction and Delivery, Inches		
1 Brass	$\frac{1}{4}$	$\frac{1}{2}$	244	8.00
2 Brass	$\frac{3}{8}$	$\frac{3}{4}$	550	10.00
3 Brass	$\frac{1}{2}$	1	977	15.00
4 Brass	$\frac{3}{4}$	$1\frac{1}{4}$	1525	20.00
5 Iron	$\frac{3}{4}$	$1\frac{1}{2}$	2200	25.00
6 Iron	1	2	3900	35.00
7 Iron	$1\frac{1}{4}$	$2\frac{1}{2}$	6000	45.00
8 Iron	$1\frac{1}{2}$	3	8800	55.00
9 Iron	2	4	15600	70.00
10 Iron	$2\frac{1}{2}$	5	24300	110.00
11 Iron	$2\frac{1}{2}$	6	35000	160.00

Sizes 1, 2, 3 and 4 are made entirely of brass. Sizes 5, 6 and 7 have iron bodies and brass unions for steam and suction connections. Sizes 8, 9, 10 and 11 have iron bodies and brass unions for steam connection only.

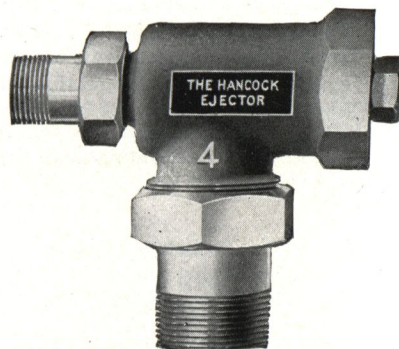


Fig. 2342. Hancock Ejector

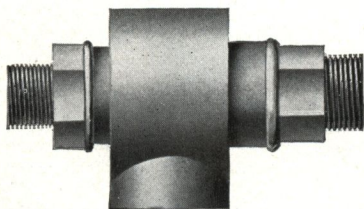


Fig. 2344. Nason Ejector

Nason Ejector

Size Number	1	2
Steam Connections	$\frac{3}{4}$	1
Suction Connections	$1\frac{1}{4}$	$1\frac{1}{2}$
Discharge Connections	1	$1\frac{1}{4}$
Capacity, Gallons per Hour	1500	3000
Brass, each	3.00	5.00
Iron, each	3.00	5.00

With this Ejector the best results are obtained where the lift is low, not exceeding 15 to 20 feet unless the steam pressure exceeds 70 pounds.

Acid Ejectors for Chemical Works

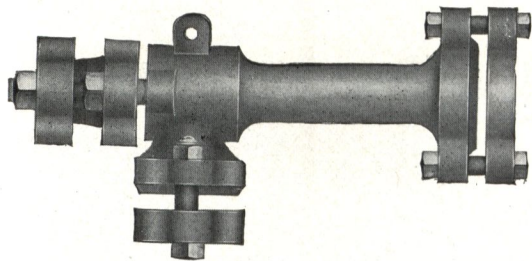


Fig. 2350. Acid Ejector

Operated by steam pressure, iron body, lined with hard lead. Made to handle sulphuric acid or any other liquids that attack iron or brass.

Ejector should be located a foot or two above the liquid so that the acid or other liquid which has to be lifted will drain out when not in use.

Number.....	1	3	5
Steam Pipe.....	$\frac{1}{2}$ or $\frac{3}{4}$	$\frac{3}{4}$ or 1	1
Liquid Pipe.....	1	$1\frac{1}{2}$	2
Gallons per Hour.....	425	1050	2600
Each.....	28.00	45.00	70.00

Suction Tees

This fitting can be used to advantage in any steam heating installation, but its chief function is to improve the operation of steam heating systems that have been incorrectly laid out.

Where two returns back up on another it will stop this action—by using the shortest one, getting its steam first at B and the other and weaker one at A, as by this means the stronger one will act as an ejector and cause the weaker one to circulate freely. All can then be connected at D and carried on to the main waste or return.

Where the pipes are in different sections, one section can be used to make the other circulate, and all leakage of the pipes stopped and an increase and uniformity of heat obtained.

It should be used where two or more connections are made to the same steam trap, as it will cause all the condensation to flow freely into the trap and prevent one backing up on the other.

Used for a noiseless water heater for heating water in tanks, etc. Steam connection is made at B.

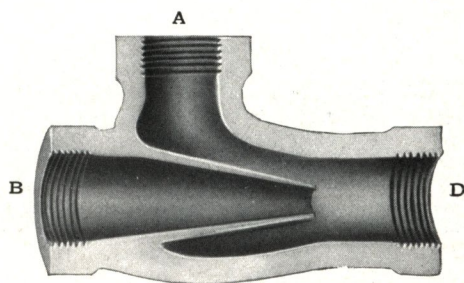


Fig. 2351. Suction Tee

Suction Tees

Standard, Pressures to 100 Pounds. Extra Heavy, Pressures to 250 Pounds

Size, inches.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	5	6
Standard, each.....	.80	.80	1.00	1.25	1.50	2.00	3.00	4.50	.....	.....	.....	.....
Extra Heavy, each....	...	...	2.00	2.50	3.00	4.00	6.00	9.00	12.00	15.00	24.00	34.00

Water Lifter

This device is economical in the use of steam and discharges a full pipe of water when in operation—when set according to directions—and requires no attention whatever. Largely used on steamships and under all conditions where tanks, vats, pits, etc., are to be emptied or filled and where a steam pressure is available. All connections to it must be air tight. Water lift should not exceed 8 feet, forcing the discharge the remainder of the distance, using bent pipe instead of fittings to obviate sharp angles and lessen friction. Bodies are iron, with brass at end of cone or nozzle.

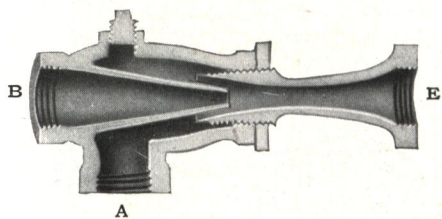


Fig. 2352. Siphon or Water Lifter

Lifter works, using as little steam as possible.

For best results place the Lifter close to the water.

To Operate

Blow out the pipe so that dry steam can be had at the Lifter; then shut off steam for a moment, after which turn it on again until the

Syphon or Water Lifter

Number.....	0	1	2	3	4	5	6
Suction.....	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Discharge.....	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Steam Pipe.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$
Capacity, Gallons per Hour.....	400	700	1100	1600	3000	5000	7000
Capacity, Cubic Feet.....	52	90	140	210	400	660	930
Each.....	5.00	6.00	8.00	10.00	12.00	20.00	25.00

Capacity based on steam at 50 pounds, with Syphon near water level.

A, Suction pipe. B, Steam connection. E, Discharge.

Noiseless Water Heater or Steam Muffler

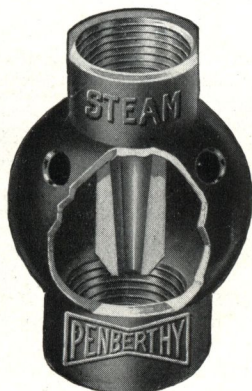
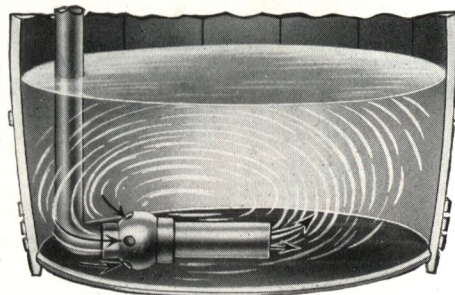


Fig. 2360. Noiseless Water Heater

The use of this Heater does away with all noise such as otherwise occurs when heating a tank or barrel of water or other liquid with steam. Of special value to creameries, chemical works, breweries, etc.

It has no couplings and no loose parts to get out of order. Simply put a piece of pipe, 10 to 12 inches long, into large end of heater and screw heater on to end of steam pipe and place below the surface of the liquid, as shown in cut, and it will heat it quickly and without waste of steam.



Showing Noiseless Water Heater Applied

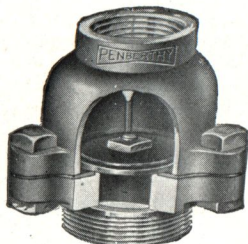
Noiseless Water Heaters

Size No.	Price Each	Steam Pipe	Discharge Pipe	Capacity*	Size No.	Price Each	Steam Pipe	Discharge Pipe	Capacity*
F	1.50	1/4	3/8	50 gal.	K	3.00	1	1 1/4	125 gal.
G	1.75	3/8	1/2	60 gal.	L	4.00	1 1/4	1 1/2	175 gal.
H	2.00	1/2	3/4	75 gal.	M	5.00	2	2	250 gal.
J	2.50	3/4	1	100 gal.	N	8.00	2	2 1/2	500 gal.

*Number of gallons of water heated from 70 degrees to 210 degrees in 30 minutes with 70 pounds steam pressure. In order to secure a noiseless operation, it is necessary to use a tank of sufficient capacity.

Injector or Ejector Foot Valve

When operating an Injector or Ejector on a long lift, or with a long horizontal pull, several minutes are required to exhaust the air when steam is turned on, resulting in a considerable waste of steam each time the machine is started. This is obviated by placing this Foot Valve on the lower end of water supply pipe. This keeps the pipe line filled or primed and the Injector starts at once without waste of steam.

Fig. 2361
Ejector Foot Valve

Ejector Foot Valves—With and Without Strainer

Size	3/8	1/2	3/4	1	1 1/4	1 1/2	2
All Brass, without Strainer	1.25	1.25	1.50	2.00	2.50	3.00	3.50
All Brass, with Strainer	1.75	1.95	1.95	2.80	3.50	4.35	5.50

The Strainer used is one size larger than pipe connection.

Injector and Ejector Strainers and Funnels



Fig. 2362. For Hose



Fig. 2363. For Pipe

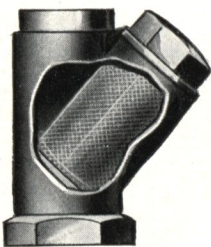


Fig. 2364. Union Strainer

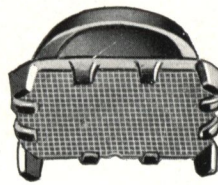


Fig. 2365. Flat Strainer

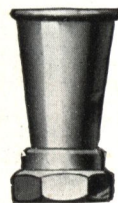


Fig. 2366. Funnel

Injector and Ejector Strainers and Funnels

Size	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
Fig. 2362, All Brass	.50	.55	.60	.75	.75	.75	.75	.75	.75	.75
Fig. 2362, Malleable Iron, Brass Wire	.40	.45	.50	.60	.60	.60	.60	.60	.60	.60
Fig. 2363, All Brass	.40	.40	.45	.50	.55	.60	.75	1.00	1.50	2.00
Fig. 2364, Union Strainer	4.00	5.00	6.00	7.50	9.00	12.00	12.00	12.00	12.00	12.00
Fig. 2365, Flat Strainer	.30	.40	.50	.60	.80	1.00	1.25	1.75	2.50	3.50
Fig. 2366, Funnel	1.00	1.25	1.50	1.75	2.00	2.50	2.50	2.50	2.50	2.50

Note: Fig. 2363 Strainers tapped 1 1/2 inches and larger are of the flat type. Fig. 2362, the shank on the 1-inch Strainer is tapered and can be used on 1 1/4-inch hose.

Steam and Air Whistles

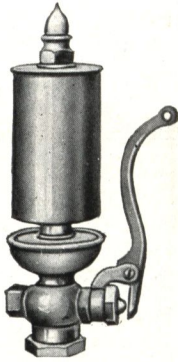


Fig. 2370

Common Whistle with Valve

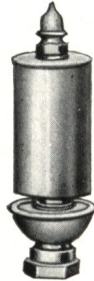


Fig. 2371

Common Whistle without Valve

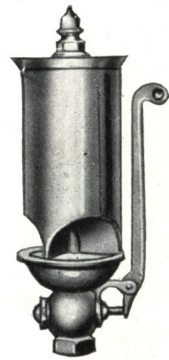


Fig. 2372

Chime Whistle with Valve

Adjustable Lever Whistles

Diameter of Bell, inches.....	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	8	10
Size Pipe Connection, inches.....	3/8	3/8	1/2	3/4	3/4	1	1	1 1/4	1 1/2	2	2 1/2	2 1/2
Fig. 2370, each.....	3.10	3.75	4.00	5.50	6.50	8.50	11.50	15.00	22.50	33.00	95.00	225.00

Plain Whistles, Without Valve

Diameter of Bell, inches.....	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	8	10
Size Pipe Connection, inches.....	3/8	3/8	1/2	3/4	3/4	1	1	1 1/4	1 1/2	2	2 1/2	2 1/2
Fig. 2371, each.....	2.20	2.75	3.00	4.35	5.25	7.25	9.50	12.00	19.00	24.00	70.00	175.00

Chime Whistles

Diameter of Bell, inches.....	1 1/2	2	2 1/2	3	4	5	6	8	10	12
Size Pipe Connection, inches.....	3/8	1/2	3/4	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Fig. 2372, with Valve, each.....	7.50	8.00	11.00	14.00	20.00	35.00	50.00	110.00	210.00	300.00
Fig. 2372, without Valve, each.....	4.50	5.00	7.50	9.50	15.00	28.00	42.00	95.00	190.00	280.00

Chime Whistles with Compound Valve

For High Boiler Pressures

Diameter of Bell, inches.....	5	6	8	10	12
Size Pipe Connection, inches.....	1 1/4	1 1/2	2	2 1/2	3
Each.....	35.00	50.00	100.00	210.00	300.00

Single Bell Quartet Chime Whistle

This Whistle has four distinct tones, pitched to a musical scale, which give an agreeable melodious sound. The combination of tones produce sound vibrations of much greater volume than can be obtained by a single tone, consequently it can be heard much farther than a common whistle.

The bell is of seamless brass tubing, and being of equal thickness and absolutely smooth on the inside, gives a clear, resonant sound.

A desirable feature is the adjustable bell, which can be raised or lowered to conform to the steam pressure under which the whistle is used. It is well known that a whistle made to blow at a low pressure will become shrill and discordant under high pressure. By the movable bell, it can be set at a point to produce a clear, full tone under any pressure, thus avoiding the disagreeable screeching not uncommon in many whistles.

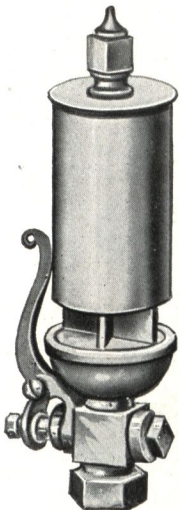


Fig. 2373

Quartet Chime Whistle
with Valve

Fig. 2374

Quartet Chime Air
Whistle without
Valve

Quartet Chime Whistles, Fig. 2373

Diameter Bell.....	2	2 1/2	3	4	5	6	8	10	12
Steam Pipe.....	1 1/2	1 1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
With Valve.....	7.00	9.00	11.00	18.00	28.00	42.00	100.00	180.00	300.00
Without Valve.....	5.00	7.00	8.00	14.00	22.00	38.00	85.00	150.00	260.00

Single Bell Quartet Chime Air Whistle, Fig. 2374

Diameter of Bell.....	1 1/2	2	2 1/2	3
Pipe Connection.....	1 1/4	1 1/2	1 1/2	3/4
With Lever and Valve, each.....	4.00	5.00	6.00	7.50
Without Lever and Valve, each.....	3.00	4.00	5.00	6.50

For use on naphtha and electric launches, automobiles, street cars, or wherever an air whistle is required. Can be adjusted to blow with a pressure from 5 pounds to 100 pounds.

Detroit Improved Standard Lubricator

Double Connection

For use on all kinds of steam engines, steam pumps, etc.
Installed with both connections between the boiler and the throttle

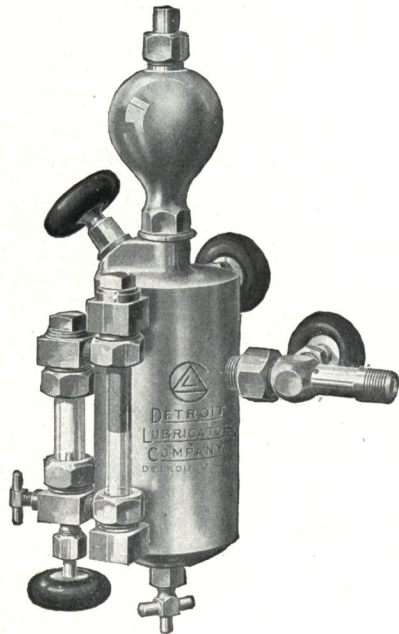
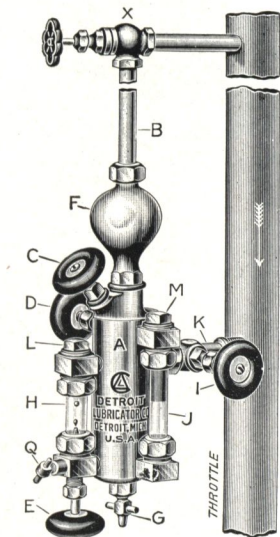


Fig. 2380
Improved Standard Double Connection

- A—Oil Reservoir
- B—Condensing Pipe
- C—Filler Plug
- D—Water Feed Valve
- E—Oil Feed Valve
- F—Condensing Chamber
- G—Drain Valve
- H—Sight Feed Glass
- I—Valve in Support Arm
- J—Gauge Glass
- K—Support Arm
- L—Plug to Insert Sight Feed Glass
- M—Plug to Insert Gauge Glass
- Q—Drain Valve for Sight Feed
- X—Angle Valve in Condensing Pipe



Detail Illustration Improved Standard
Double Connection Lubricator

Improved Standard Sight-feed Lubricators

Size	1/8 Pint	1/2 Pint	1 Pint	1 Quart	1/2 Gallon	1 Gallon
Pipe Thread on Support Arm, inch	1/8	1/4	1/2	3/4	3/4	3/4
For Cylinder	Under 10 in.	10 to 12 in.	12 to 18 in.	18 to 30 in.	30 in. and over	34
Brass Finish, each	9.80	10.80	15.00	20.30	29.80	38.20
Nickel Finish, each	11.00	12.00	16.20	21.70	31.50	40.60

Detroit Improved Standard Lubricator

Single Connection

For use on all kinds of steam engines, steam pumps, etc., where conditions do not permit the installation of a double connection lubricator.
Connected to the steam pipe either above or below the throttle, or into the steam chest direct.

The Single Connection Improved Standard Lubricator has replaced the single connection Style C.

It is used on all kinds of reciprocating steam engines, steam pumps, etc., where a double connection lubricator cannot be installed because the arrangement of equipment does not give enough room for the installation of a double connection lubricator. Wherever possible, however, we advise the use of a double connection lubricator in preference to the single connection type because any lubricator with two connections to the steam pipe has better condensation and consequently better feeding qualities.

Single Connection Lubricators

Capacity	1/4 Pint	1/3 Pint	1/2 Pint	1 Pint	1 Quart
Size Connection	1/2	1/2	1/2	1/2	1/2
Brass Finish, each	9.90	10.40	11.80	15.90	21.00
Nickel-plated, each	10.90	11.40	13.00	17.10	22.50

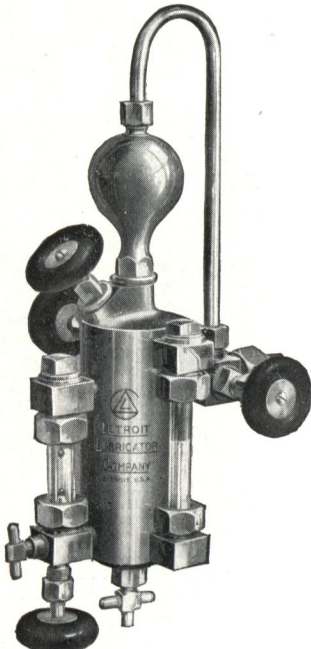


Fig. 2381

Detroit "500" and "600" Lubricators

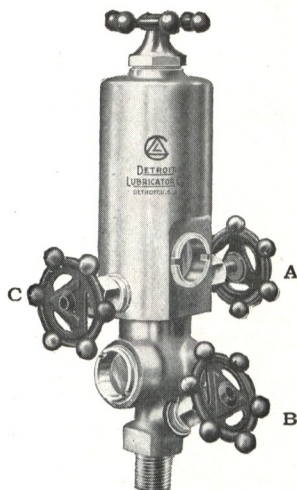


Fig. 2390
Style "500" for Gas Engines
and Air Compressors

The Detroit "500" Lubricator is made for all types of gas engines and air compressors. It is easily operated and gives constant lubrication to the cylinder under every condition of service.

The lubricator is made very substantially so as to withstand excessive pressures, vibration and rough usage. It has bull's-eye sight feed and gauge glasses which are easily kept tight and will not break. The filler plug and valves are provided with metal handles.

The lubricator is connected direct to the cylinder, using, if desired, a short piece of pipe and elbow. No separate valve is used, as the valve "B" in the support post cuts off the lubricator from the cylinder when it is desired to repack the glasses, clean the lubricator, etc.

The valve "C" controls the admission of oil to the oil passages and should be used to operate the lubricator, making it unnecessary to change the adjustment of valve "A," which need not be disturbed after once being properly regulated.



Fig. 2391
Style "600" for Ammonia
Cylinders

Special

For service where the pressure varies, the "500" Lubricator with ball check is furnished.

For service where the pressure is constant, as on the air line, the "500-A" Lubricator, without any ball check, is furnished.

For service where the pressure is from 250 to 500 pounds, the "500-X" is furnished.

For service where the pressure exceeds 500 pounds, the "500-XX" is furnished.

The Detroit "600" Ammonia Cylinder Lubricator

is designed to resist the action of ammonia. It is built on the same lines as the Detroit "500" Air Compressor Lubricator and the description of the construction and operation as above applies to the "600," except that those parts subject to the deteriorating effects of ammonia fumes are made of either iron or steel.

The "600" Lubricator is attached to the ammonia cylinder, or to the pipe leading to the cylinder.

Detroit "500" and "600" Lubricators

Capacity	$\frac{1}{2}$ Pint	$\frac{1}{2}$ Pint	1 Pint	1 Quart
"500" and "500-A," Brass	8.90	9.40	13.10	18.20
"500" and "500-A," Nickel-plated	11.00	10.60	14.60	19.60
"500-X," Brass	11.80	12.60	16.40	21.30
"500-X," Nickel-plated	12.90	13.80	17.60	22.70
"500-XX," Brass	23.30	27.00	34.70	44.10
"500-XX," Nickel-plated	24.70	28.80	36.10	45.50
"600," Brass	9.40	10.40	13.40	18.20
"600," Nickel-plated	10.60	11.60	14.60	19.70
Pipe thread on support arm (except "500-XX")	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
Pipe thread on "500-XX" . . . . .	....	$\frac{3}{4}$	$\frac{3}{4}$	....

Detroit "300" Grease Lubricators

Double Connection

For feeding grease to the cylinders of all kinds steam engines, steam pumps, etc.

This Lubricator is installed either with both connections between the boiler and the throttle, or with the condenser tube above the throttle and the support arm or oil delivery arm below the throttle.

"300" Grease Lubricators

Capacity	$\frac{1}{2}$ Pint	1 Pint	1 Quart	$\frac{1}{2}$ Gallon
Brass Finish	14.00	19.40	25.50	33.10
Nickel-plated	15.24	20.60	26.70	34.70
Shank Size, inches	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$

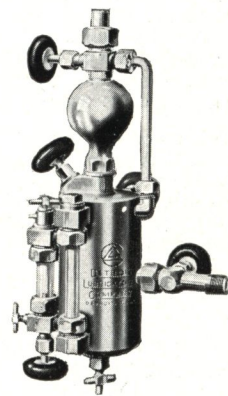


Fig. 2392
"300" Grease Lubricator

The Michigan Cyclone Lubricator

For Use on Stationary Engines and Steam Pumps

The distinctive feature of the Michigan Cyclone Lubricator is the large heating channel or caliduct which passes through the body from the support arm to the upper sight feed arm. This cored passage is a part of the original casting and in addition to its function as a heating chamber it serves to strengthen the construction by binding and bracing the walls of the body. It will also be noticed that the main portion of this passageway is considerably higher than the point of steam supply, thus making it self-draining and insuring that this heating chamber is always filled with live steam.

Interior view shows this cored passage and also shows two internal perpendicular tubes. One of these tubes extends from the condensing chamber downwards and carries the water of condensation to the lower part of the body to replace the oil that is fed out. The other tube screws into the lower sight feed arm and extends to the upper part of the body and the oil that is fed out passes down through this tube to the nozzle below the sight feed glass.

It will therefore be seen that the oil is always fed from the upper portion of the body, and in our Cyclone Lubricator this oil in the upper part of the body is always kept in a heated and thoroughly liquid condition by reason of this large, well designed, self-draining heating chamber. Our lubricators will, therefore, feed the heaviest oil freely and regularly even in very cold weather.

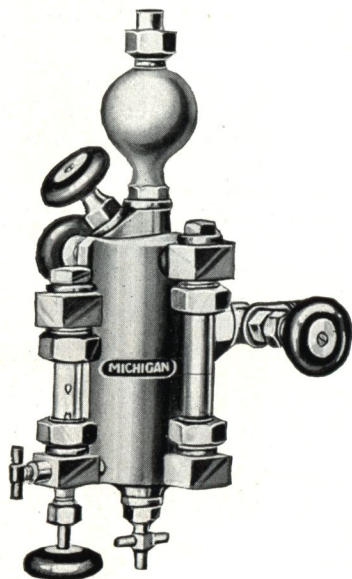
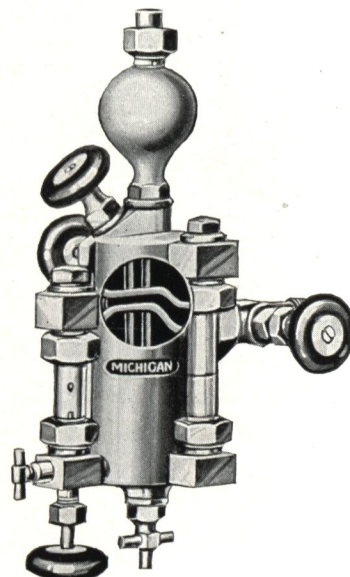


Fig. 2400
Cyclone Lubricator



Interior View Cyclone
Lubricator

Price List

	1/8 Pint	1/2 Pint	1 Pint	1 1/2 Pint
Brass Finished, each.....	13.30	15.00	20.00	23.00
Nickel-plated, each.....	14.30	16.00	21.35	24.70
Size, Sight-Feed Glass, inches..	5/8x2 3/4	3/4x2 3/4	3/4x2 3/4	3/4x2 3/4
Size, Gauge Glass, inches.....	5/8x2 3/4	5/8x2 3/4	5/8x4	5/8x4 1/4
Pipe Thread on Support arm....	1/2	1/2	1/2	1/2

	1 Quart	1/2 Gal.	1 Gal.
Brass Finished, each.....	26.75	38.35	60.00
Nickel-plated, each.....	28.35	40.35	63.35
Size, Sight-Feed Glass, inches..	3/4x2 3/4	3/4x3	3/4x3
Size, Gauge Glass, inches.....	5/8x4 3/4	3/4x7 1/4	3/4x8 3/4
Pipe Thread on Support Arm.....	1/2	3/4	3/4

The 1/8 Pint and 1/2 Pint sizes have the filler plug located in the arm above the gauge glass, as the bodies in these sizes are too small to allow room for the filler in the shoulder as in the pint and larger sizes.

The Michigan Rural Lubricator

Single Connection Style

The Single Connection Rural Lubricators are very similar in their general construction to the Cyclone style, except that the design is modified to make them single connection pattern. All repair parts for the 1/8 pint and larger sizes are common to both styles except the condensers, support arms and equalizing tubes. The 1/4 pint Rural Lubricator does not have gauge glass, and the 1/8 pint and 1/2 pint sizes have the filler plug located on the arm above the gauge glass.

We recommend that a double connection lubricator be used wherever it is possible to use that type, as having one connection to supply condensation and another for delivering the oil, they are naturally more positive and often operate more freely than lubricators which have but one connection through which condensation is supplied and the oil delivered. Except in rare cases the single connection lubricators give very satisfactory service.

Price List

	1/4 Pint	1/8 Pint	1/2 Pint	1 Pint	1 Quart
Brass Finished.....	7.60	8.80	10.00	12.00	15.60
Nickel Finished.....	8.40	9.60	11.00	13.50	17.40
Pipe Thread on Support Arm.....	1/2	1/2	1/2	1/2	1/2
Size Sight Feed Glass, inches.....	3/4x1 7/8	5/8x2 3/4	3/4x2 3/4	3/4x2 3/4	3/4x2 3/4
Size Gauge Glass, inches.....	.....	5/8x2 3/4	3/4x2 3/4	5/8x4	5/8x4 3/4

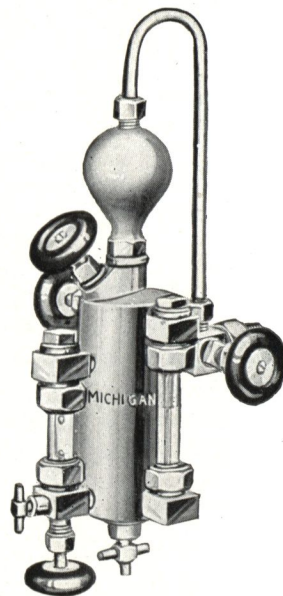


Fig. 2401. Michigan Rural Single
Connection Lubricator

Cylinder Lubricators

Improved Handy Lubricator

Fig. 2410

Number.....	1	2	3	4	5	6	7
Capacity, pints.....	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	1	1 $\frac{1}{2}$	2	
With Sight Glass.....	8.00	10.00					
With Sight and Oil Gauge Glass.....			14.00	16.00	18.00	24.00	30.00

The Handy Drop Feed Lubricator is designed for use on stationary and portable engines, steam pumps, etc.

Nathan Lubricator

Fig. 2412

Size, pints.....	$\frac{1}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	1 $\frac{1}{2}$	2
Each, Nickel-plated.....	16.00	20.00	24.00	30.00	36.00	44.00

The Nathan Up-drop Sight Feed Lubricator is designed for steam chests and cylinders of stationary engines and pumps of all kinds.

Volunteer Lubricator

Fig. 2413

For stationary engines and all kinds of pumps.

Number.....	1	2	3
Capacity, pints.....	$\frac{1}{8}$	$\frac{1}{2}$	$\frac{3}{4}$
Each.....	10.00	12.00	15.00

Defender Lubricator

Fig. 2414

Size, pints.....	$\frac{1}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	1 $\frac{1}{2}$	1 Qt.
Polished or Nickel-plated, each	14.00	20.00	24.00	30.00	36.00	44.00

The Defender Up-drop Sight Feed Lubricator is designed for steam chests and cylinders of stationary engines and all styles of pumps.

Simplex Lubricator

Fig. 2415

Capacity, pints.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{3}$	$\frac{1}{2}$	$\frac{3}{4}$	1
Each, Polished or N. P.....	10.00	12.00	14.00	18.00	22.00	27.00

Duplex Lubricator

Fig. 2416

Capacity, pints.....	$\frac{1}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	1 $\frac{1}{2}$	2
Each.....	16.00	20.00	24.00	30.00	36.00	44.00

The Simplex and Duplex Lubricators may be applied to horizontal or vertical pumps and engines, and can be converted into double-connection lubricators by removing loop and plugging lower loop connection in the lubricator.

Funnel-shaped Top Lubricator

(No waste of oil in filling)

Fig. 2417

These Lubricators are designed for general use

Number.....	1	2	3	4	5	6	7
Size, inches.....	1 $\frac{1}{4}$	1 $\frac{1}{2}$	1 $\frac{3}{4}$	2	2 $\frac{1}{4}$	2 $\frac{1}{2}$	3
Capacity, pints.....	$\frac{1}{16}$	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	1	1 $\frac{1}{2}$
Each.....	1.25	1.75	2.00	2.50	3.00	3.50	4.50

In ordering Funnel-shaped Top Lubricators specify the size pipe thread wanted on shank.

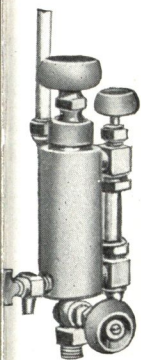
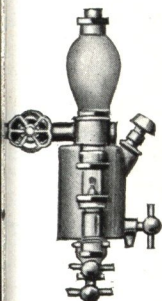
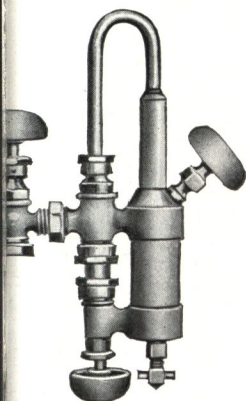
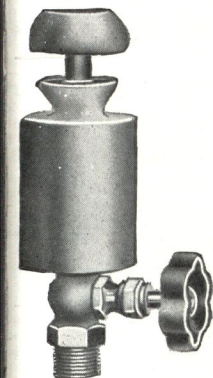
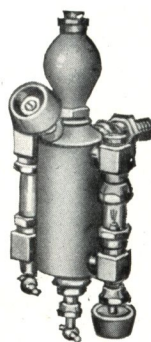
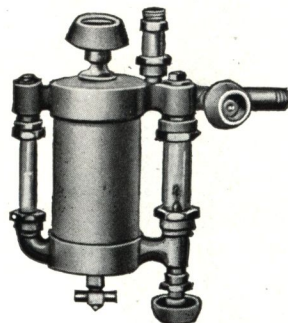
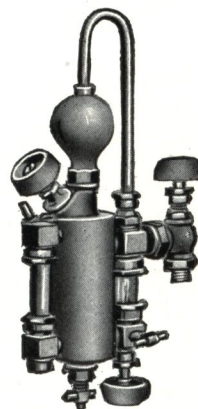
Fig. 2410
Handy LubricatorFig. 2413
Volunteer LubricatorFig. 2415
Simplex Lubricator

Fig. 2417

Fig. 2412
Nathan LubricatorFig. 2414
Defender LubricatorFig. 2416
Duplex Lubricator

Penberthy Engine Lubricators

Plain Engine Lubricators

Where a strong and simple automatic Lubricator is required, the Penberthy has its advantages. The metal, the workmanship, the design and the finish are of the best.

The Plain Engine Lubricator, fitted with drain cock and tube, and working, as it does, on the principle of displacement of oil by condensation, is especially adapted to all small cylinders needing a constant supply of lubricant. It automatically delivers the oil as long as there is any in the cup and steam pressure is on the cylinder. and it automatically ceases to feed when steam is shut off.

These Lubricators are for use on small engines and steam pumps and should be placed on the steam chest.

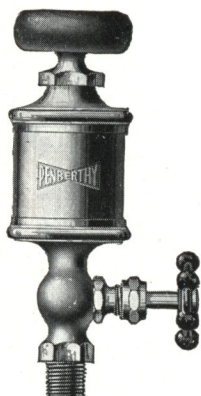


Fig. 2420
Plain Engine
Lubricator

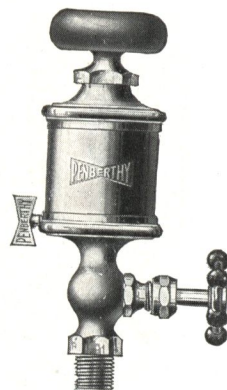


Fig. 2421
Plain Engine Lubricator
with Drain Cock

Price List

Number	00	0	1	2	3	4	5	6	7
Diameter, inches	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	3	3 1/2
Capacity, ounces	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5
Pipe Thread	3/8	3/8	3/8	1/2	1/2	1/2	1/2	3/4	3/4
Plain	2.00	2.20	2.40	2.60	2.90	3.25	3.75	4.75	7.00
Plain with Cock and Tube	3.00	3.20	3.40	3.60	3.90	4.25	4.75	5.75	8.00



Fig. 2422
Iron Body Engine
Lubricator

"Penberthy" Engine Lubricator or Steam Chest Oiler

Made in Iron in one size only. Iron Body, Bronzed, with Iron wheels (filler plug and trimmings, Finished Brass)

This lubricator is made of heavy castings and is very strong and durable. The body being a single casting is practically indestructible. The valve in the shank makes it possible to fill the cup while the engine is running and also acts as a regulator. This lubricator is recommended for use on traction and stationary engines and steam pumps and will give perfect satisfaction.

Diameter of Body, inches	2
Capacity, ounces	2 1/2
Threaded for Iron Pipe, inch	1 1/2
Each	2.25

Brass Oil Cups



Fig. 2423. Elbow Shank

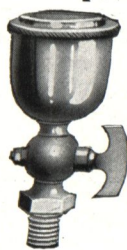


Fig. 2424. T-Handle Cock

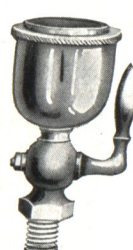


Fig. 2425. Lever Handle Cock

Fig. 2423. Elbow Shank Oil Cup

Number	17	18	19	20	21	22	23
Diameter, inches	1 1/8	1	1 1/8	1 1/4	1 1/2	1 3/4	2
Shank Thread, inches	3/8	1/4	1/4	1/4	3/8	3/8	1/2
Capacity, ounces	.3	.5	.8	1.25	1.75	2.5	3.5
Each	.50	.70	.80	1.00	1.40	1.80	2.30

Fig. 2424. T-Handle Cock Oil Cup

Number	11	12	13	14	15	16
Diameter, inches	1	1 1/4	1 1/2	2	2 1/4	2 1/2
Shank Thread, inches	1/2	3/4	3/8	1/2	1/2	1/2
Capacity, ounces	.5	.8	1.25	3.5	4.5	6.5
Each	1.00	1.50	2.00	3.00	3.75	4.25

Fig. 2425. Lever Handle Cock Oil Cup

Number	11 1/2	12 1/2	13 1/2	14 1/2	15 1/2	16 1/2	17 1/2
Diameter, inches	3/4	1	1 1/4	1 1/2	2	2 1/4	2 1/2
Shank Thread, inches	3/8	1/4	1/4	1/2	1/2	1/2	1/2
Capacity, ounces	.2	.5	.8	1.25	3.5	4.5	6.5
Each	.90	1.00	1.60	2.20	3.25	4.00	5.00

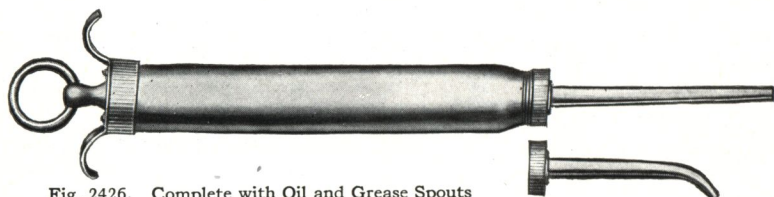


Fig. 2426. Complete with Oil and Grease Spouts

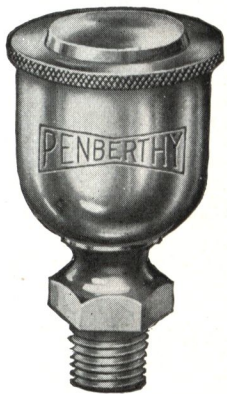
Each..... 2.00

Combined Oil and Grease Gun

For readily and economically applying lubricants on automobiles, motor boats and general machinery. Made of 1 1/8-inch diameter heavy gauge seamless brass tubing. Will force fluid oil or non-fluid oil or grease into any bearing. By removing spout heavy non-fluid can be drawn into barrel. Can be operated with one hand.

Penberthy Oilers

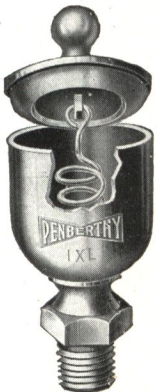
"Screw Top" Plain Brass Oiler

Fig. 2430
Screw Top Plain Brass Oiler

This cup is made of high grade, red, cast brass, highly polished and perfect in every way; furnished with or without siphon. In ordering, specify which style is wanted. Unless otherwise specified, cups will be sent without siphon.

Size Number.....	00	0	1	2	3	4	5	6	8
Diameter of Body, inches.....	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2
Size Shank, inch.....	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{2}$
Capacity, ounces.....	$\frac{1}{10}$	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{3}{4}$	$1\frac{1}{4}$	$1\frac{3}{4}$	$2\frac{1}{2}$	$3\frac{1}{4}$
Each without Siphon, Pol. Brass.....	.25	.30	.35	.40	.50	.60	.90	1.25	1.75
Each with Siphon, Pol. Brass.....	.35	.40	.45	.50	.60	.70	1.00	1.35	1.85
Price each without Siphon, N. P.....	.45	.50	.55	.65	.75	.90	1.25	1.65	2.25
Each with Siphon, N. P.....	.55	.60	.65	.75	.85	1.00	1.35	1.75	2.35

"IXL" Spring Top Oil Cup

Fig. 2431
"IXL" Spring Top Oil Cup

We claim an advantage in this cup over the ordinary oiler, in its self-closing spring cover. The spring is attached to the cover and passes down through the oil-way, where it is held by a loop which admits of the cover being turned at will without affecting the spring. In filling the cup the cover is simply tipped to one side, and when released springs back again into place. No amount of jar or motion can displace it, and cover can never be lost. A small amount of wicking is placed at the mouth of the oil-way, which prevents the oil feeding faster than is necessary. The tension of the spring can be increased by simply giving the loop an extra turn with a pair of nippers.

Size Number.....	0	1	2	3	4	5	6	8
Diameter of Body, inches.....	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2
Size Shank, inch.....	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$
Capacity, ounces.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{3}{4}$	$1\frac{1}{4}$	$1\frac{3}{4}$	$2\frac{1}{2}$	$3\frac{1}{4}$
Not Polished, each.....	.45	.55	.65	.75	.90	1.10	1.40	1.80
Finished Brass, each.....	.50	.60	.70	.85	1.00	1.25	1.60	2.00
Nickel-plated, each.....	.70	.80	.95	1.10	1.30	1.60	2.00	2.50
Extra Springs, per dozen.....	1.00	1.10	1.25	1.40	1.55	1.75	2.00	2.25

"Safety" Crank Pin Plunger Oiler

This cup is of the plunger type and provides for two feeds, a positive force-feed from the bottom of the cup and a splash-feed from the top through the hollow plunger.

The cover has a tight closing filler plug and the adjusting screw is also packed with a stuffing box in the cover which absolutely prevents leakage and waste of oil.

By means of the adjusting screw the stroke of the plunger can be regulated and with it the force-feed of the cup.

The cup does not require to be shut off when the engine is stopped as the plunger seats at the bottom of the cup and oil will not feed when engine is not running.

Fig. 2432
Safety Crank Pin Oiler

Size Number.....	0	1	$1\frac{1}{2}$	2	3	4
Outside Diameter of Glass, inches.....	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2	$2\frac{1}{4}$	$2\frac{1}{2}$
Height of Glass, inches.....	$1\frac{1}{8}$	$1\frac{3}{8}$	$1\frac{5}{8}$	$1\frac{7}{8}$	$2\frac{1}{8}$	$2\frac{3}{8}$
Capacity, ounces.....	$\frac{3}{8}$	1	$1\frac{1}{2}$	$2\frac{1}{4}$	4	5
Pipe Thread of Shank, inch.....	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$
Price, Brass Finish, each.....	1.50	1.75	2.00	2.50	3.00	4.00
Price, Nickel-plated, each.....	1.90	2.20	2.50	3.00	3.60	4.70
Extra Glasses, net, each.....	.08	.10	.11	.12	.15	.25
Extra Cork Washers, net, dozen.....	.12	.18	.24	.30	.36	.42

Self-closing Oil Cups

Style A Oil Cup

Fig. 2440
Closed

For use where space is limited. They set low, open easily, close automatically; are dust-proof. Cannot jar open or loose.

No. 4, $\frac{1}{8}$ Pipe Thread, $\frac{9}{16}$ Diameter Cap, Polished or Nickel-plated, per 100...	12.50
No. 5, $\frac{1}{4}$ Pipe Thread, $\frac{5}{8}$ Diameter Cap, Polished or Nickel-plated, per 100...	16.00

Orders will be filled with nickel-plated cups unless otherwise specified.

Fig. 2440
Open

Style B Oil Cup

Fig. 2441
Closed

This cup is opened by raising cap as shown in open view. The cap can be turned so oil can be easily inserted from any direction. When cap is released it closes automatically. Dust-proof. Cannot jar open.

Number	5	6	7	8
Pipe Thread, inch.	$\frac{1}{8}$ or $\frac{1}{4}$	$\frac{1}{8}$ or $\frac{1}{4}$	$\frac{1}{8}$ or $\frac{3}{8}$	$\frac{1}{8}$, $\frac{3}{8}$ or $\frac{1}{2}$
Diameter Hexagon	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1
Diameter Cap	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{2}$
Polished or Nickel-plated, per 100	16.00	22.00	30.00	38.00

Nos. 7 and 8 regularly fitted with tube and wick. No. 6 can be fitted with tube and wick if so ordered. Furnished nickel-plated unless otherwise specified.

Fig. 2441
Open

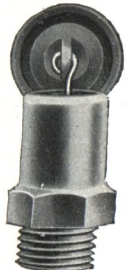
Style D Oil Cups

Fig. 2442
Closed

Similar to Style A in construction and good points, but is designed for use where there is plenty of clearance, and where it is desirable to have a cup high enough to attract attention.

Number	5	6	7	8
Pipe Thread, inch.	$\frac{1}{8}$ or $\frac{1}{4}$	$\frac{1}{8}$ or $\frac{1}{4}$	$\frac{1}{8}$ or $\frac{3}{8}$	$\frac{1}{8}$, $\frac{3}{8}$ or $\frac{1}{2}$
Diameter Hexagon	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1
Diameter Cap	$1\frac{1}{8}$	$\frac{7}{8}$	1	$1\frac{1}{2}$
Polished or Nickel-plated, per 100	16.00	22.00	30.00	38.00

Furnished polished brass or nickel-plated—the latter unless otherwise specified.

Fig. 2442
Open

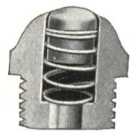
Style K Oil Cups

Fig. 2443
Full view

Recommended where a low-setting, neat-appearing oiler of the Push Valve type is desired. The rounding top of the valve prevents dirt from accumulating where it will be carried into the cup. Self-closing. Dust-proof.

Number	23	24	25
Pipe Thread, inch.	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$
Diameter Hexagon	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$
Polished or Nickel-plated, per 100	6.00	7.50	10.50

Furnished either polished brass or nickel-plated—the latter unless ordered otherwise.

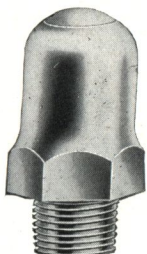
Fig. 2443
Interior view

Style L Oil Cup

This cup is of the Push Valve type and has all the good points of Style K. It is designed for locations where there is plenty of clearance and where it is desirable to have an oil cup sufficiently conspicuous to attract attention.

Number	3-L	4-L	5-L
Pipe Thread, inch.	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{4}$
Diameter Hexagon	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{5}{8}$
Polished or Nickel-plated, per 100	10.70	12.50	16.00

In ordering any of the cups listed above be careful to specify style and size number. Style L cups are furnished either polished brass or nickel—the latter unless otherwise ordered.

Fig. 2444
Style L Cup

Penberthy Oilers

"Sentry" Sight-Feed Oiler with Snap Lever and Sight Feed

The "Sentry" is cast brass, full polish finish, and a high grade oiler in every detail.

When this oiler is once adjusted to the exact amount of oil to be fed, it is unnecessary to change it. When starting or stopping, simply raise or lower Snap Lever.

When lever is up cup is feeding. When lever is down feed is shut off. When lever is at 45 degrees angle cup flushes.

Size Number.....	0	1	1½	2	3	4	5	6
Outside Diameter of Glass, inches.....	1¼	1½	1¾	2	2¼	2½	3	3½
Height of Glass, inches.....	1½	1¾	1¾	2½	2½	2¾	3	4
Capacity, ounces.....	⅝	1	1½	2½	4	5	10	18
Pipe Thread of Shank.....	⅝	¾	¾	¾	¾	¾	¾	¾
Brass Finish, each.....	3.00	3.25	3.50	3.75	4.25	5.25	7.25	9.25
Nickel-plated, each.....	3.50	3.75	4.00	4.25	4.75	5.75	8.00	10.25
Extra Glasses, net, each.....	.08	.10	.11	.12	.15	.25	.40	.65
Extra Cork Washers, net, dozen.....	.12	.18	.24	.30	.36	.42	.52	.64

Fig. 2450
"Sentry"

Sure-Drop Glass Body Sight-Feed Lubricator

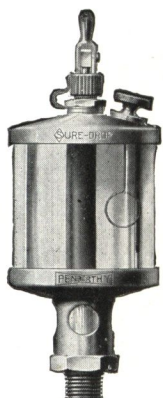
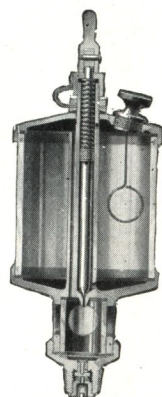
For Gas, Gasoline and Oil Engines

The Sure-Drop Gas Engine Oiler does all that the name implies—the drop is sure and never unreliable. It is a gravity feed lubricator which checks the pressure from gas engines. Therefore, no combustion or back-shots can enter the sight-feed chamber and consequently interfere with the proper formation of the drop, nor can the sight-feed glass become clouded or coated with fine particles of carbon. The "Sure-Drop" always gives a perfectly clear glass for the observation of the feed.

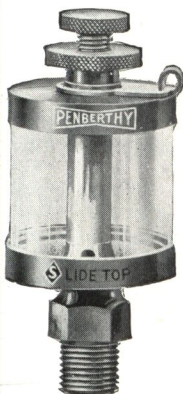
With each explosion of the engine, the plunger valve of the "Sure-Drop" is forced to its seat in recess of shank, the flat under face of this plunger deflecting the exploded gas and absolutely preventing any from passing into sight-feed chamber. A fine mesh strainer is inserted in bottom of sight-feed chamber, which prevents any sediment that might be in the oil from entering cylinders.

We would also add that this Oiler has an exceptionally large filler plug, a high grade ratchet adjustment of the feed, and a plain design, which is easily wiped off, making the oiler always a high class appearing, ornamental trimming of an engine.

Size Number.....	1½	2	3	4	5	6	8
Outside Diameter of Glass, inches.....	1¾	2	2¼	2½	3	3½	4¼
Height of Glass, inches.....	1¾	1¾	2½	2½	3	4	5
Capacity of Oil, ounces.....	1½	2½	4	5	10	18	32
Pipe Thread of Shank, inch.....	¼	¾	¾	¾	½	½	¾
Finished Brass, each.....	2.00	2.80	3.50	4.00	5.40	7.00	14.00
Nickel-plated, each.....	2.40	3.25	4.10	4.60	6.25	8.20	16.40

Fig. 2451
"Sure-Drop"

Section

Fig. 2452
"Slide Top"

"Slide Top" Glass Oil Cup

This cup is made entirely from cast brass, ensuring strong, durable cup. The sliding disc is so arranged that when open the largest possible space is given for filling, and when closed a small vent is left to enable the cup to feed. It is also equipped with a feed adjuster and locknut.

Size Number.....	0	1	1½	2	3	4	5	6
Outside Diameter of Glass, inches.....	1¼	1½	1¾	2	2¼	2½	3	3½
Height of Glass, inches.....	1½	1¾	1¾	2½	2½	2¾	3	4
Capacity, ounces.....	⅝	1	1½	2½	4	5	10	18
Pipe Thread of Shank.....	⅝	¾	¾	¾	¾	¾	¾	¾
Brass Finish, each.....	.80	1.00	1.25	1.50	1.90	2.40	3.10	4.00
Nickel-plated, each.....	.95	1.20	1.50	1.75	2.30	2.75	3.50	4.50
Extra Glasses, net, each.....	.08	.10	.11	.12	.15	.25	.40	.65
Extra Cork Washers, net, dozen.....	.12	.18	.24	.30	.36	.42	.52	.64

"Sancho" Glass Oiler

Made from castings, not spun brass. Feed regulating device controlled by set nut. Cover with vent, which allows oil to feed on any bearing. A thoroughly well made, reliable and durable oiler.

Size Number.....	0	1	1½	2	3	4	5	6
Outside Diameter of Glass, inches.....	1¼	1½	1¾	2	2¼	2½	3	3½
Height of Glass, inches.....	1½	1¾	1¾	2½	2½	2¾	3	4
Capacity, ounces.....	⅝	1	1½	2½	4	5	10	18
Pipe Thread of Shank.....	⅝	¾	¾	¾	¾	¾	¾	¾
Brass Finish, each.....	1.25	1.50	1.75	2.10	2.55	3.15	3.90	4.80
Nickel-plated, each.....	1.40	1.70	2.00	2.35	2.85	3.50	4.30	5.30
Extra Glasses, net, each.....	.08	.10	.11	.12	.15	.25	.40	.65
Extra Cork Washers, net, dozen.....	.12	.18	.24	.30	.36	.42	.52	.64

Fig. 2453
"Sancho"

Penberthy Grease Cups

"Silex" Automatic Spring Compression Grease Cup

A thoroughly well made, Automatic Grease Cup, used extensively on slides, journals, eccentrics and crank pins.

The amount of feed is regulated by the feed screw in hexagon. The cup requires no further attention, except refilling.



Fig. 2460
"Silex" Automatic Grease Cup

Size Number.....	00	0	1	1½	2	2½	3	4
Inside Diameter, inches.....	1	1¼	1½	1¾	2	2¼	2½	3
Extreme Outside Diameter, inches.....	1⅝	1⅞	1⅞	2⅜	2½	2¾	3⅜	3⅞
Height Over All, Plunger Up, inches.....	4	4¼	5⅜	6⅞	6⅞	7	7½	8⅜
Pipe Thread of Shank, inch.....	⅝	¾	¾	¾	¾	¾	¾	¾
Capacity, ounces.....	⅛	1	1½	2¼	3¼	4¾	6	10
Brass Finish, each.....	1.50	2.00	2.50	2.85	3.20	3.75	4.30	6.00
Nickel-plated, each.....	1.75	2.25	2.80	3.20	3.60	4.40	5.00	6.75

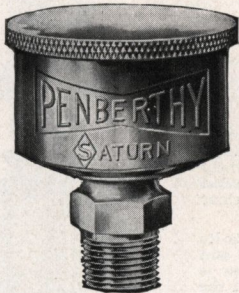


Fig. 2461
"Saturn" Compression Grease Cup

"Saturn" Plain Compression Grease Cup

In many places, particularly for rough work, there is nothing equal to a plain brass grease cup such as we offer. This cup is thoroughly well made from castings, making a strong, durable cup, which will outlast, many times over, a cheap spun brass article.

Size Number.....	00	0	1	2	3	4
Outside Diameter, inches.....	1⅝	1⅞	1½	2	2¼	3¼
Pipe Thread, inch.....	⅝	¾	¾	¾	¾	¾
Capacity, ounces.....	⅛	⅜	1	2	3½	5
Price, not Polished, each.....	.55	.75	.95	1.25	1.70	2.30
Finished Brass, each.....	.70	.90	1.15	1.50	2.15	2.90
Nickel-plated, each.....	.80	1.05	1.35	1.80	2.60	3.40

The "Senator" Grease Cup

The Senator Grease Cup is a high grade, cast brass grease cup with a leather packing inserted in the shank. This shank has an adjusting nut for the leather washer and the tension in the leather thread can thus be regulated. The construction of the adjusting ring is such as to allow the greatest thickness of metal and also it is beveled toward the outside, so as to crowd the leather against the thread in the cap. The combined length of thread on the metal of the shank, as well as on the leather, is greater than on any similar grease cup of the same size.

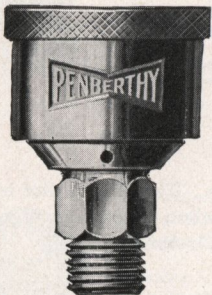


Fig. 2462
"Senator" Grease Cup

Size.....	00	0	1	2
Inside Diameter, inches.....	1	1¼	1½	2
Extreme Diameter, inches.....	1⅞	1⅞	1⅞	2⅞
Extreme Height (open), inches.....	1¾	2	2⅞	2⅞
Shank Pipe Thread, inch.....	⅝	¾	¾	¾
Capacity of Grease, ounces.....	⅛	⅜	1	2
Brass Finish, each.....	.85	1.05	1.35	1.80
Brass, Nickel-plated, each.....	.95	1.15	1.50	2.00

The "Siren" Ratchet Grease Cup

The "Siren" Ratchet Grease Cup is a self-locking grease cup, the cap of which is locked to the body or shank by a flat spring which projects from shank to the side of cover or cap.

A positive-lock cup is a necessity for perfectly regulated lubrication. Since the cover cannot be moved by jarring or vibration, it always remains in the exact position where left, thereby assuring the operator that grease is forced to the bearing with every turn of the cap.

The cap can be screwed in or out easily, as the lug, which projects from the spring, passes over the grooves in the cover with slight tension, yet it makes a positive lock and it is impossible for the cap to work loose or fall off from vibration.

This cup is especially adapted for use on vibrating machinery, has a large capacity, occupies the minimum space, and is easily filled.



Fig. 2463
"Siren" Ratchet Grease Cup

Size.....	000	00	0	½	1	2
Body Diameter, inches.....	1⅞	1⅞	1¼	1⅞	1⅞	1⅞
Extreme Diameter, inches.....	1⅞	1⅞	1⅞	1⅞	1⅞	2⅞
Extreme Length Open, inches.....	1⅞	1⅞	1⅞	2⅞	2⅞	2⅞
Pipe Thread of Shank, inch.....	⅝	¾	¾	¾	¾	¾
Capacity of Grease, ounces.....	¼	½	¾	1	1½	2
Each.....	.70	.85	1.00	1.20	1.50	2.10
Nickel-plated, each.....	.85	.95	1.15	1.40	1.75	2.40

Brass Grease Cups

"Samson" Screw Plunger Grease Cup

A well put up, substantial Cast Brass Grease Cup, which will stand any amount of hard usage; made of best steam metal, highly polished.

Size Number	00	0	1	1½	2	2½	3	4
Inside Diameter, inches	1	1¼	1½	1¾	2	2¼	2½	3
Extreme Outside Diameter, inches	1⅜	1⅝	1⅞	2⅛	2½	2¾	3⅛	3⅝
Height over all, Plunger raised, inches	4	4¾	5½	6	6⅜	7	7½	8⅞
Pipe Thread of Shank, inch	⅛	¼	¼	¼	⅜	½	½	½
Capacity, ounces	⅛	1	1½	2¼	3¼	4¾	6	10
Brass Finish, each	1.00	1.20	1.60	1.80	2.00	2.40	2.80	4.00
Nickel-plated, each	1.20	1.45	1.90	2.10	2.40	2.90	3.40	4.75



Fig. 2470
"Samson"

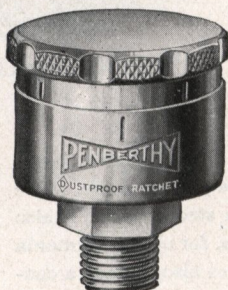


Fig. 2471
Standard Pattern

Dust-proof Ratchet Grease Cups

A self-locking cup of large capacity occupying minimum space
Adapted for automobiles, etc.



Fig. 2472
Wing Pattern

The "Dustproof" Grease Cup is a self-locking grease cup, the cap being locked to the body or shank by means of a cylindrical dust-proof shell, having projections on the inside of same, which fit into the grooves in the cover of the cup, the dust projection being so placed that it allows a very fine adjustment of grease, i. e. the cover interlocks twelve times on one turn of the cap.

A positive-lock cup is a necessary adjunct to perfectly regulated lubrication. Since the cover cannot be moved by jarring or vibration, it always remains in the exact position where left, thereby assuring the operator that the grease is forced into the bearing at every turn of the cup.

The shell is also utilized as a drip cup, which fits around the cover and makes a dust-proof joint.

This style cup is especially adapted for use on automobiles, where a large capacity dust-proof cup is desired in the minimum space. An important feature is that this cup may be used on the under side of a clutch, bearing, spring, worm-and-gear housings or any place where it is impracticable to bring the grease to the cup as you can take the cap to the grease.

Size	000	00	0	1	2
Body Diameter, inches	1⅜	1⅝	1¾	1⅞	2
Extreme Diameter, inches	1⅝	1⅞	2	2⅛	2¼
Extreme Length Open, inches	1⅞	2	2⅛	2¼	2½
Pipe Thread of Shank, inches	⅛	¼	¼	¼	⅜
Capacity of Grease, ounces	¼	½	¾	1	2
Plain, each	1.05	1.25	1.50	1.75	2.50
Nickel-plated, each	1.15	1.40	1.75	2.00	2.90

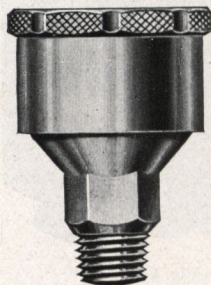


Fig. 2473
Stamped Grease Cup

Stamped Steel and Brass Grease Cups

These cups are pressed from sheet metal. They are strong, free from air holes and defects.

Price List

Number	000	00	0	1	2	3	4	5
Inside Diameter, inches	¾	1	1¼	1½	2	2½	3	3½
Regular Pipe Thread, inch	⅛	¼	¼	¼	⅜	½	½	¾
Capacity, Grease, ounces	¼	½	¾	1	2	3½	5	8
Dull Brass Finish, each	.46	.56	.74	.96	1.28	1.76	3.00	4.50
Rough Steel Finish, each	.40	.50	.65	.80	1.05	1.45	2.00	3.00

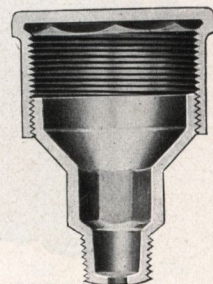


Fig. 2474
Interior View

Rochester Automatic Lubricators

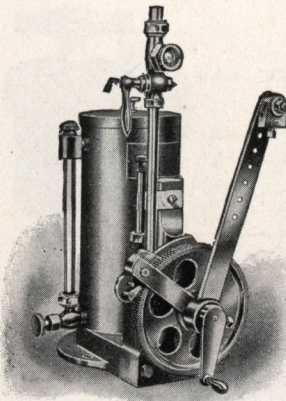


Fig. 2480. Single Feed

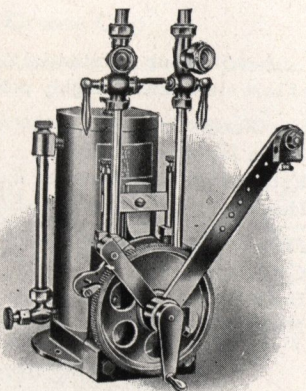
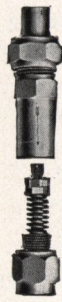
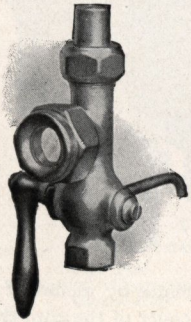


Fig. 2481. Double Feed



The Multiplus Sight Feed shown on the left is furnished without extra charge with each feed of all Rochester Lubricators of a capacity of one pint or more. The improved vacuum and check shown at the right as well as a steam nipple, is also furnished with each feed. Special steel check valves and nipples, for use on ammonia cylinders, will be substituted if so specified on the order. Prices also include a connecting rod and connection and an arm or bracket for attaching the lubricator to the engine.

Size.....	One Feed	Two Feed	Three Feed	Four Feed	Five Feed	Six Feed	Seven Feed	Eight Feed
1/2 Pint.....	18.00	.....	.....	.....	.....	.....	.....	.....
1 Pint.....	25.00	.....	.....	.....	.....	.....	.....	.....
2 Pints.....	30.00	45.00	.....	.....	.....	.....	.....	.....
3 Pints.....	35.00	50.00	.....	.....	.....	.....	.....	.....
1/2 Gallon.....	40.00	55.00	70.00	90.00	.....	.....	.....	.....
1 Gallon.....	45.00	60.00	80.00	100.00	.....	.....	.....	.....
2 Gallons.....	.....	75.00	90.00	105.00	120.00	130.00	140.00	150.00

Two-Compartment, for Feeding Two Kinds of Oil

3 Pints, Two-Feed, Two-Compartment, for compressors and ice machines, each.....	55.00
1 Gallon, Two-Feed, Two-Compartment, for compressors and ice machines, each.....	65.00
1 Gallon, Three-Feed, Two-Compartment, for compressors and ice machines, each.....	85.00
1 Gallon, Four-Feed, Two-Compartment, for compressors and ice machines, each.....	105.00

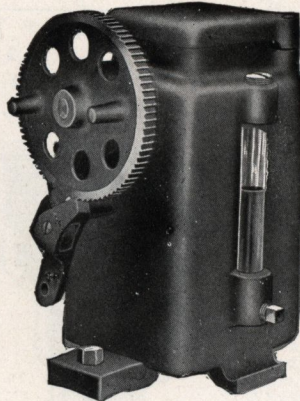


Fig. 2482
No. 1 Pump. Capacity, One Quart.
One Feed.
Each..... 10.00

Pickering Force Feed Oil Pump

In this pump the ratchet form of drive is employed, making it effective under all conditions. All pumps have hinged covers, to exclude any foreign substance from air reservoir. There is a single reservoir to fill, but in the No. 2 Pump each cylinder of a double engine is supplied independently. Handles on ratchet wheel permit use as a hand pump. Can be easily adjusted for all ordinary demands while engine is in motion. There are no openings through oil tank at bottom except as outlet to feeds, thus overcoming all possibility of leakage about plates and shafts. Every pump thoroughly tested before shipments.

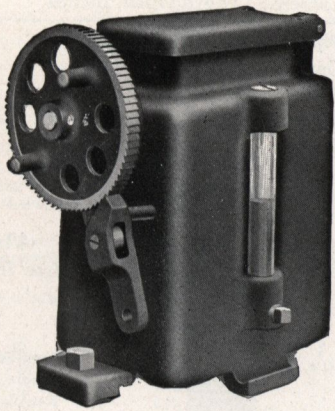


Fig. 2483
No. 2 Pump. Capacity 1 1/2 Quarts.
Two Feed.
Each..... 13.00

Hart Force Sight-Feed Oil Pump

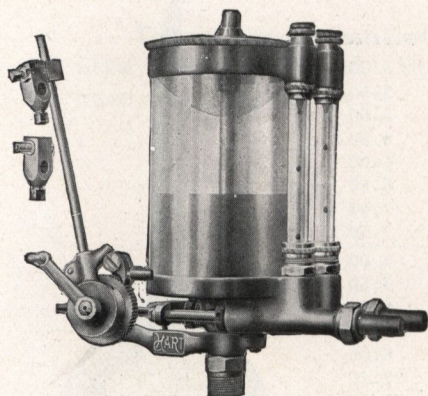


Fig. 2490. Two-Feed Pump

The "Hart" Force Sight-Feed Oil Pump is a satisfactory device for use where lubrication under pressure is necessary. Simple in design and construction, it affords positive and uniform feed with the utmost economy of oil. It is made in One-Feed, Two-Feed, Three-Feed and Four-Feed sizes, with varying capacities for each; the oil is forced through the regulating chamber to the sight-feed glass, not gravity fed; a surplus supply is always held in the regulating chamber, under pressure, while the only successful system of check valves ever applied to a device of this kind prevents back pressure. It has packed piston plungers and is made with steel case-hardened ratchet wheel. The sight-feed glass is always clear, as no steam or water reaches it, and it is always at atmospheric pressure. It is made in three styles—Polished Brass Finish, Glass Body; Full Nickel-plate Finish, Glass Body; Rough Brass Finish, Metal Body.

Note: Illustration shows Glass Body. Other styles quoted on application.

Right Hand Pumps furnished unless otherwise ordered.

Price List

Capacity	1-Feed	2-Feed	3-Feed	4-Feed	Diameter Glass Inches	Height Glass Inches
1/2 pint	16.00	.....	.....	.....	3	3
1 pint	20.00	30.00	.....	.....	3 1/2	4
1 quart	25.00	35.00	45.00	.....	4	5
3 pints	30.00	40.00	55.00	.....	4 1/2	6
2 quarts	35.00	45.00	60.00	80.00	5	6
3 quarts	40.00	50.00	70.00	90.00	5	8
1 gallon	45.00	55.00	80.00	100.00	6	8

Felthousen Brass Body Cylinder Oil Pump

For Engine and Pump Cylinders

Number	Description	Capacity	Size Body	Brass Finish	Nickeled
1	Rough	1/4 pint	2x2	3.50	4.00
2	Finished	1/4 pint	2x2	5.00	5.50
03	Finished	1/4 pint	2x2	3.50	4.00
6	Finished	1/2 pint	2 3/4 x 2 3/4	5.00	5.50
7	Finished	1 pint	3 1/2 x 3 1/2	7.50	8.00
3	Finished	1/4 pint	2x2	3.50	4.00
04	Finished	1/2 pint	2 3/4 x 2 3/4	5.00	5.50
4	Finished	1 pint	3 1/2 x 3 1/2	7.50	8.00
5	Finished	1 1/2 quarts	7 x 4 1/2	12.00	12.75

Prices Nos. 1 and 2 include Tallow Bowl. M and F valves 50 cents extra. Prices are for screw top or strainer top. Regularly furnished screw top and 3/8-inch pipe size shank thread.

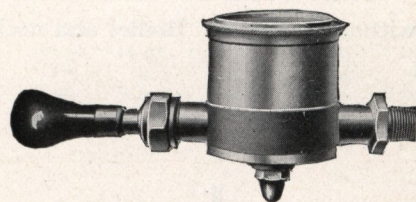


Fig. 2491

Felthousen Oil Pump, Style Nos. 3, 04, 4 and 5

Nos. 03, 6 and 7 (not illustrated) have connection at bottom to go on top of cylinder or steam chest

Hand Oil Pumps

These Oil Pumps are of the latest design and of the best workmanship and finish.

Attention is called to the fact that the Brass Body Pump is equipped with reversible shank, which permits its use in either a horizontal or vertical position.

On large engines these pumps are used as an auxiliary to the Sight-Feed Lubricator or Mechanical Pump, as it insures a positive method of delivering oil to the cylinders when either fail, or upon starting the engine. They are a valuable addition to a steam pump, traction engine, road roller or portable engine.

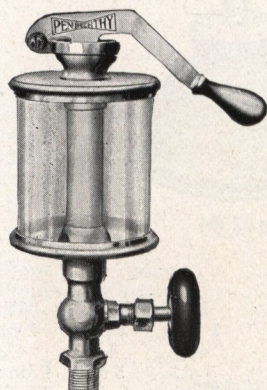


Fig. 2492. Glass Body Oil Pump

Glass Body Oil Pump

Number	6	7	8
Capacity, pint	1/4	1/2	1
Pipe Thread	3/8	1/2	1/2
Brass Finish	8.00	8.50	10.00
Nickel-plated	8.75	9.50	11.00

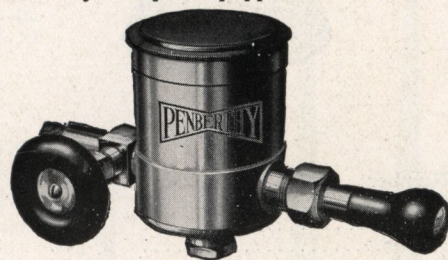


Fig. 2493

Brass Body Oil Pump—Reversible Shank

Brass Body Oil Pump

Number	6B	7B	8B
Capacity, pint	1/4	1/2	1
Pipe Thread	3/8	1/2	1/2
Brass Finish	4.25	5.00	7.50
Nickel-plated	4.75	5.75	8.60

One-piece Solid Steel Oilers

No.	Diameter Inches	Capacity Pint	Length Nozzle Inches	Per Dozen
2004	3 ³ / ₈	1 ¹ / ₃	4	5.00
2006	3 ³ / ₈	1 ¹ / ₃	6	5.50
2009	3 ³ / ₈	1 ¹ / ₃	9	6.00
2012	3 ³ / ₈	1 ¹ / ₃	12	6.50
3004	3 ³ / ₄	1 ¹ / ₂	4	6.00
3006	3 ³ / ₄	1 ¹ / ₂	6	6.50
3009	3 ³ / ₄	1 ¹ / ₂	9	7.00
3012	3 ³ / ₄	1 ¹ / ₂	12	7.50
4004	4 ¹ / ₈	3 ³ / ₄	4	7.00
4006	4 ¹ / ₈	3 ³ / ₄	6	7.50
4009	4 ¹ / ₈	3 ³ / ₄	9	8.00
4012	4 ¹ / ₈	3 ³ / ₄	12	8.50
5004	4 ⁵ / ₈	1	4	8.00
5006	4 ⁵ / ₈	1	6	8.50
5009	4 ⁵ / ₈	1	9	9.00
5012	4 ⁵ / ₈	1	12	9.00

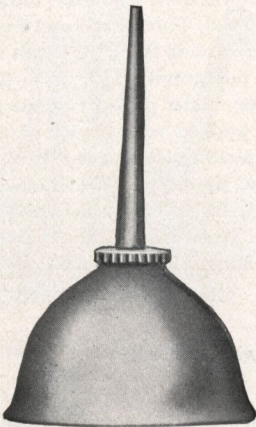


Fig. 2500. One-piece Solid Steel Oiler

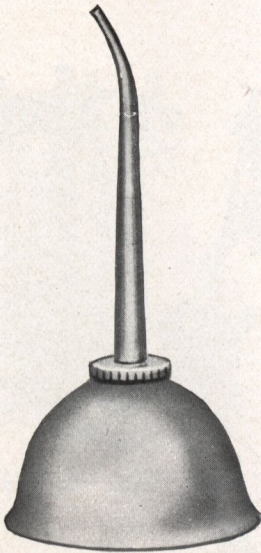


Fig. 2501. One-piece Solid Steel Oiler, Bent Nozzle

Note: Nozzles 6 inches or longer are shipped bent unless ordered straight. All Nozzles are interchangeable.

For price Nickel-plated add 2.00 to list prices.

Copperized Steel and Brass Oilers

These Oilers are made with wide mouth and can be easily filled without a funnel. Bodies and neck are one piece and have no seam.

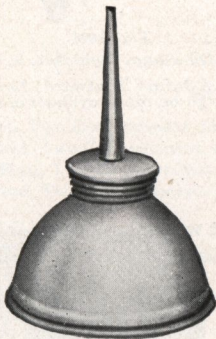


Fig. 2502

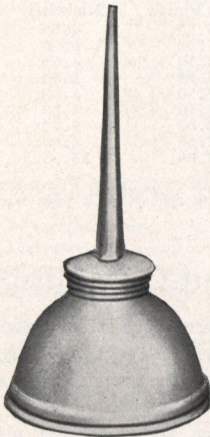


Fig. 2503

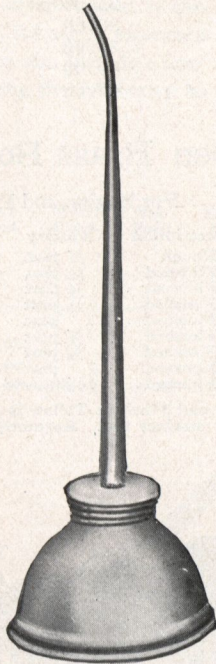


Fig. 2504

Copperized Steel Oilers

Number	12	13	13-A	14	14-A	14-AA	14-B	15	15-A	16
Capacity	3 oz.	5 oz.	5 oz.	5 oz.	1/2 pt.	1/2 pt.	1/2 pt.	1 pt.	1 pt.	1 pt.
Diameter	2 ³ / ₄	3 ³ / ₈	3 ³ / ₈	3 ³ / ₈	3 ³ / ₄	3 ³ / ₄	3 ³ / ₄	4 ¹ / ₄	4 ¹ / ₄	4 ¹ / ₄
Nozzle	2 1/2 st.	3 st.	5 st.	9 bnt.	3 st.	5 st.	9 bnt.	3 st.	5 st.	9 bnt.
Per dozen	4.50	5.50	6.00	6.50	7.50	8.00	8.50	9.25	9.75	10.50

Brass Oilers

Number	120	130	130-A	140	140-A	140-AA	140-B	150	150-A	160
Capacity	3 oz.	5 oz.	5 oz.	5 oz.	1/2 pt.	1/2 pt.	1/2 pt.	1 pt.	1 pt.	1 pt.
Diameter	2 ³ / ₄	3 ³ / ₈	3 ³ / ₈	3 ³ / ₈	3 ³ / ₄	3 ³ / ₄	3 ³ / ₄	4 ¹ / ₄	4 ¹ / ₄	4 ¹ / ₄
Nozzle	2 1/2 st.	3 st.	5 st.	9 bnt.	3 st.	5 st.	9 bnt.	3 st.	5 st.	9 bnt.
Per dozen	6.50	8.00	8.75	9.25	10.00	10.75	11.25	12.00	13.00	14.00

One-piece Solid Steel Oilers

These Oilers are made with wide mouth and can be easily filled without a funnel. Bodies and neck are one piece and have no seams.

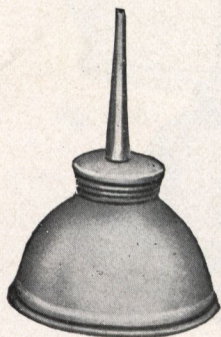


Fig. 2510

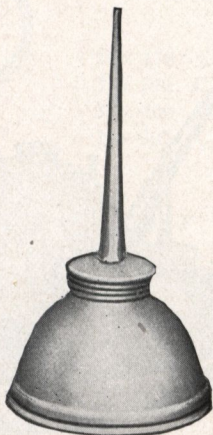


Fig. 2511

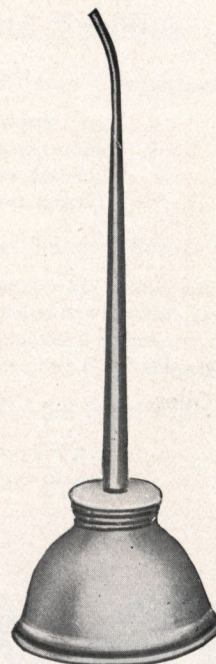


Fig. 2512

Oxidized and Brass-plated Steel Oilers

Number.....	12	13	13-A	14	14-A	14-AA	14-B	15	15A	16
Capacity.....	3 oz.	5 oz.	5 oz.	5 oz.	1/2 pt.	1/2 pt.	1/2 pt.	1 pt.	1 pt.	1 pt.
Diameter, inches.....	2 3/4	3 3/8	3 3/8	3 3/8	3 3/4	3 3/4	3 3/4	4 1/4	4 1/4	4 1/4
Nozzle, inches.....	2 1/2 st.	3 st.	5 st.	9 bnt.	3 st.	5 st.	9 bnt.	3 st.	5 st.	9 bnt.
Per dozen.....	4.50	5.50	6.00	6.50	7.50	8.00	8.50	9.25	9.75	10.50

Nickel-plated Steel Oilers

Number.....	N-120	N-130	N-130-A	N-140	N-140-A	N-140AA	N-140-B	N-150	N-150-A	N-160
Capacity.....	3 oz.	5 oz.	5 oz.	5 oz.	1/2 pt.	1/2 pt.	1/2 pt.	1 pt.	1 pt.	1 pt.
Diameter, inches.....	2 3/4	3 3/8	3 3/8	3 3/8	3 3/4	3 3/4	3 3/4	4 1/4	4 1/4	4 1/4
Nozzle, inches.....	2 1/2	3	5	9	3	5	9	3	5	9
Per dozen.....	6.50	8.00	8.75	9.25	10.00	10.75	11.25	12.00	13.00	14.00

Extra Nozzles for Bench Oilers

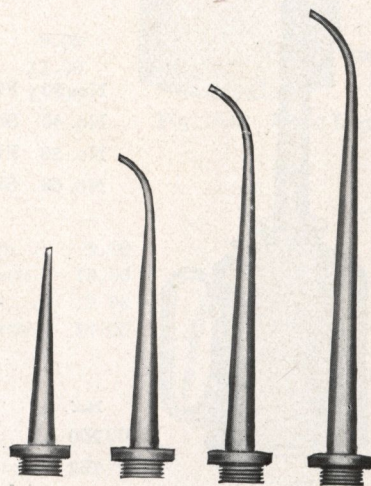
4-inch, per dozen.....	2.00
6-inch, per dozen.....	2.50
9-inch, per dozen.....	3.00
12-inch, per dozen.....	3.50

Extra Nozzles for Hand Oilers

10-inch, per dozen.....	3.00
12-inch, per dozen.....	3.50
18-inch, per dozen.....	4.00

Copperized and Other Plated Finishes

	Copperized	Brass	Nickeled
2 1/2-inch, per dozen.....	2.25	3.00	3.00
3-inch, per dozen.....	2.75	3.50	3.50
5-inch, per dozen.....	3.25	4.25	4.25
9-inch, per dozen.....	4.25	5.00	5.00
12-inch, per dozen.....	5.75	6.25	6.25
18-inch, per dozen.....	7.00	7.50	7.50

Fig. 2513
Welded Steel Spouts

Engineers' Sets

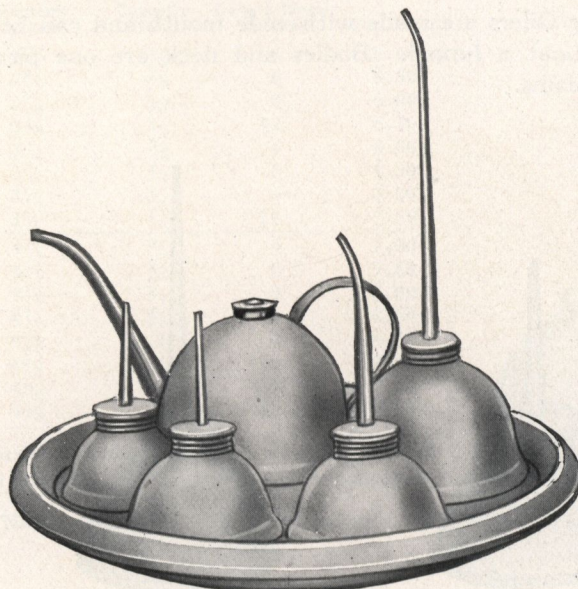


Fig. 2520. Engineers' Set

Welded Steel

No. 140	Five pieces, Polished Steel, including Tray, per set.....	\$7.00
No. 141	Six pieces, Polished Steel, including Tray, per set.....	9.00

Copper-plated

No. C30	Five pieces, Copper-plated, including Tray, per set.....	5.00
No. C40	Six pieces, Copper-plated, including Tray, per set.....	7.00

Nickel-plated Steel

No. N50	Five pieces, Nickel-plated Steel, including Tray, per set.....	7.00
No. N60	Six pieces, Nickel-plated Steel, including Tray, per set.....	10.00

Solid Brass

No. 30	Five pieces of Brass, including Tray, per set.....	6.00
No. 40	Six pieces of Brass, including Tray, per set.....	9.00
No. 50	Five pieces of Brass, Nickel-plated, including Tray, per set.....	8.00
No. 60	Six pieces of Brass, Nickel-plated, including Tray, per set.....	11.00

Welded Steel Railroad Oilers

Highly Polished Steel

An ornament to any Locomotive or Engine Room

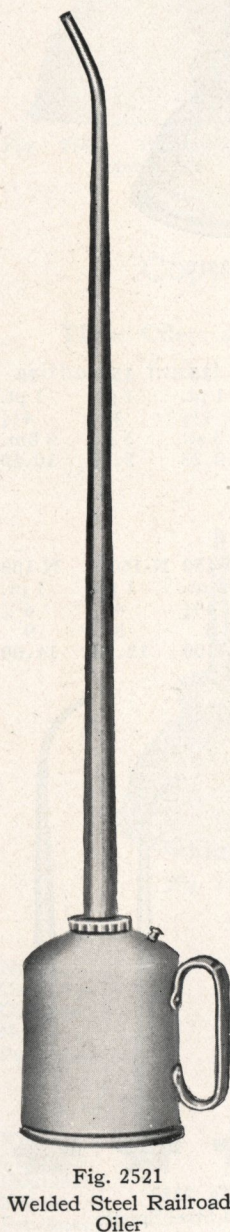


Fig. 2521

Welded Steel Railroad Oiler

No.	Capacity Pints	Diameter Inches	Height Inches	Length Nozzle Inches	Per Dozen
160	1½	4	5	12	16.00
162	1½	4	5	23	17.00
164	2	4½	6	12	17.00
166	2	4½	6	23	18.00

Fillers, Tallow Pots, Hand Lamps and Torches

Engineers' Fillers—Copperized

No. 19	Capacity 1 pint, per dozen.....	14.00
No. 19-A	Capacity 1½ pints, per dozen.....	17.00
No. 210	Capacity 1 quart, per dozen.....	20.00
No. 211	Capacity 2 quarts, per dozen.....	24.00

Engineers' Brass Fillers—Screw Top

No. 170	Capacity 1 pint, diameter 4⅛ inches, per dozen..	18.00
No. 190	Capacity 1½ pints, diameter 4¾ inches, per dozen	22.00
No. 200	Capacity 1 quart, diameter 5 inches, per dozen..	30.00
No. 201	Capacity 2 quarts, diameter 6 inches, per dozen.	34.00

Engineers' Welded Steel Fillers

No. 515-F	Capacity 1 pint, per dozen.....	12.00
No. 520-F	Capacity 1 quart, per dozen.....	18.00



Fig. 2530. Engineers' Filler

Tallow Pots—Copper-plated

No. 212	Capacity 1 quart, per dozen.....	21.00
No. 213	Capacity 2 quarts, per dozen.....	25.00

Tallow Pots—Plain Steel, Welded

No. 515-T	Capacity 1 pint, per dozen.....	12.00
No. 520-T	Capacity 2 quarts, per dozen.....	18.00



Fig. 2531. Tallow Pot

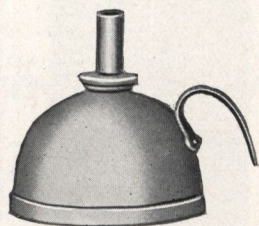


Fig. 2532. Hand Lamp

Coppered Steel Hand Lamps

No. 20	Capacity 5 ounces, diameter 3⅜ inches, per dozen.....	6.00
No. 20½	Capacity ½ pint, diameter 3¾ inches, per dozen.....	9.00
No. 21	Capacity 1½ pints, diameter 4⅛ inches, per dozen.....	12.00

Coppered Steel Hand Lamps

No. 22	Capacity 1 pint, diameter 3¼ inches, per dozen.....	9.00
No. 23	Capacity 1½ pints, diameter 4 inches, per dozen.....	12.00
No. 24	Capacity 1 quart, diameter 4⅞ inches, per dozen.....	15.00

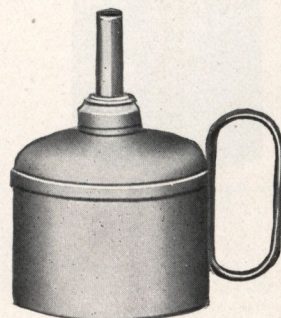


Fig. 2533 Hand Lamp

Pyramid Torch

Fig. 2534

No. 81	1 Pint Side Burner, per dozen...	9.00
No. 82	1 Quart Side Burner, per dozen..	10.00
No. 181	1 Pint Top Burner, per dozen....	9.00
No. 182	1 Quart Top Burner, per dozen..	10.00

Locomotive Torch

Fig. 2535

No. 110-A	for ⅝ inch wick, per dozen.....	9.00
With Wick Guard, extra,	per dozen.....	1.50

Fig. 2534
Seamless Pyramid TorchFig. 2535
Seamless Locomotive Torch

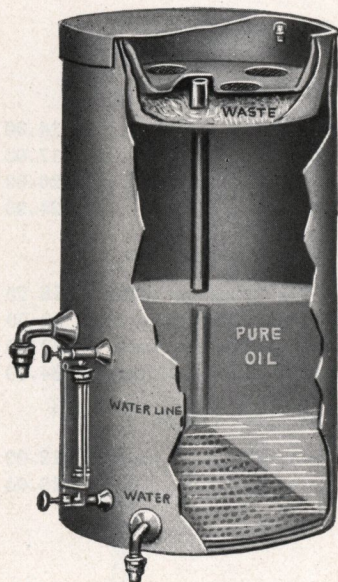


Fig. 2540
Bartow Waste Oil Filter

Bartow Waste Oil Filter

The Bartow Waste Oil Filter is extremely simple in construction. It is well made, and for general conditions has given universal satisfaction.

The Filter is made of galvanized iron throughout, and fitted with cast brass gauges and faucets. The faucets are of the “chuck” type, and having no handles cannot be opened accidentally.

In operation, the dirty oil is screened through the strainers in the bottom of the upper pan into the waste chamber below, where the heavier particles are intercepted. On reaching the level of the vertical pipe, the oil descends into the conical strainer at bottom, and passing through its small perforations, rises upward through the water in which the strainer is submerged to the pure oil level above, ready for use.

Capacity Gallons, 24 Hours.....	5	10	20	30
Diameter, inches.....	14	14	19	19
Height, inches.....	18	24	21	30
Each.....	20.00	25.00	32.00	35.00

Cross Waste Oil Filter

The Cross Filter is recommended for filtering engine and common machinery oils. This Filter needs no introduction, having been extensively used for upward of 20 years. The construction and operation are clearly shown in the sectional view. It will be noted that the Cross employs waste as the filtering medium, and is supplied with a steam coil to increase speed of filter where it is located in cool places. In a warm place the steam connection is unnecessary.

No.	Each	Capacity Gallons 24 Hours	Diameter Inches	Height Inches	Net Weight Pounds
1	29.50	20- 30	18	30	45
2	19.50	5- 10	12	26	24
3	60.00	30- 40	24	36	82
4	75.00	50- 60	30	54	163
5	90.00	70- 90	33	56	184
6	110.00	100-120	35	60	208
7	130.00	120-150	35	74	233
8	165.00	150-200	40	76	340

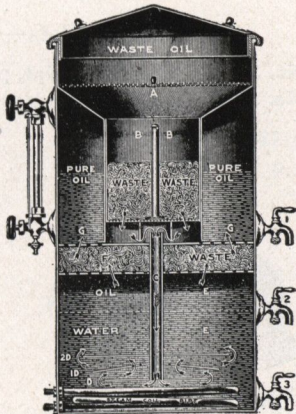


Fig. 2541
Sectional View

American Waste Oil Filter

This Filter is recommended for cleaning lard, cylinder, crank-case and other grades of heavy oil, as the hot water chamber in the top surrounds the unfiltered oil and renders it thin and easy flowing, so that what is difficult or impossible with other types is easily accomplished by the American. Its construction adapts it to the use of hot water from a gas engine, for the purpose of heating the waste oil and facilitating its rapid filtration. Pipe connections can be made so that a continuous flow of hot water from gas or gasoline engine cylinders can be had through the hot water chamber.

In the American Filter the filtering medium employed is Animal Bone Black instead of waste.

No.	Each	Capacity Gallons 24 Hours	Diameter Inches	Height Inches	Net Weight Pounds
1	29.50	20- 30	18	30	45
2	19.50	5- 10	12	26	24
3	60.00	40- 50	24	36	82
4	75.00	50- 60	30	54	163
5	90.00	70- 90	33	56	184
6	110.00	100-120	35	60	208

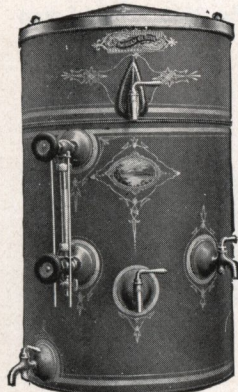


Fig. 2542
American Oil Filter

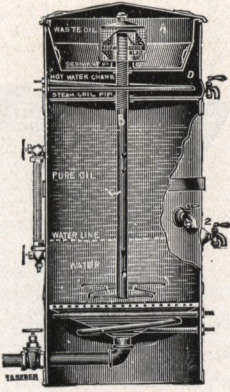


Fig. 2542
Sectional View

Oil Tanks



Fig. 2550
Perfection Oil Tank



Fig. 2551
Gasoline Storage Tank

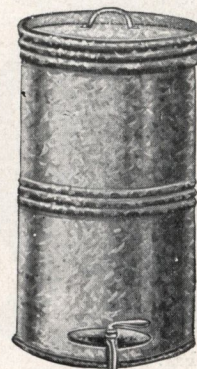


Fig. 2552
Oil Storage Tank

Fig. 2550. Perfection Oil Tank

Furnished with steady stream pump, which can be detached and used for pumping oil from barrel into tank. Each tank furnished with 1 pint, 1 quart and 2 quart tin measures and a 1 quart tin funnel, unless otherwise specified. Corrugated body and bottom. Painted red. Body, No. 26 Gauge; bottom, No. 24 Gauge; hood and top, No. 28 Gauge. Heavily retinned inside.

Capacity, gallons	30	60	106
Length of Pump, inches	33	38	47
Price, each	6.00	7.00	12.50
Extra Pumps, each	.85	1.00	1.40

Fig. 2551. Gasoline Tanks

Galvanized. Painted red. Corrugated body and bottom. Iron threaded caps and brass faucets with keys. Body, No. 26, Gauge; bottom, No. 24 Gauge; top, No. 28 Gauge.

Capacity, gallons	36	63	111
Price, each	5.70	6.50	12.00

Fig. 2552. Oil Storage Tank—Loose Cover No. 24 Gauge Galvanized Iron

Capacity, gallons	30	60
Dimensions, inches	18x31	20x48½
Price, each	10.50	17.20

Non-explosive Safety Cans

When filled with highest test gasoline a lighted match can be held at the opening without danger of an explosion. Made of heavy galvanized steel; they are non-corrosive.

Fig. 2553. Eclipse Type—Self-closing

Capacity	10 gal.	5 gal.	3 gal.	2 gal.	1 gal.	½ gal.	1 qt.	1 pt.
Price, each	8.00	6.00	3.75	3.25	2.50	1.50	1.25	1.00
Brass, each, ½ Gallon, 2.00. 1 Quart, 1.50.								

Red Crown Can

Large opening. Hangs well on pump. A popular automatic closing can.

Capacity 5 gallons, Price, each	4.50
---------------------------------	------

Tilting Can and Tray

Used as supply to smaller types. Tray catches overflow. Easily removable from tray. Can be placed outside building at night.

Capacity 5 gallons, each	9.50
--------------------------	------

Priming Cans

Used by factories, garages, motor boats, tailor shops, etc. Will not leak when upset.

Steel, ½ pint, 1.00; 1 pint, 1.10; 1 quart, 1.25.	
Brass, ½ pint, 1.25; 1 pint, 1.50; 1 quart, 1.75.	

Oily Waste Cans—New York Pattern

Spring Cover, Galvanized

Size Number	1	2	3	4	5	6	7	8
Diameter, inches	11¼	12	13	14	15	18½	20½	23½
Height, inches	11¼	15½	17½	19¼	21	22	27	32
Price, each	1.55	1.95	2.60	3.21	3.90	5.80	7.73	10.80
Height from floor, inches	2½	3	3	3	3	4	4	4



Fig. 2553. Eclipse Type



Fig. 2554
Oily Waste Can

The Sterling Exhaust Head

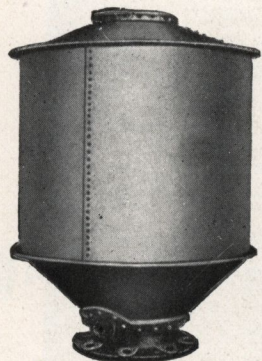


Fig. 2560
Sterling Exhaust Head

Size.....	1-1½	2-2½	3-3½	4-4½	5	6	7	8	10	12	14	16	18	20
Each, Sterling or Swartwout.....	20.00	25.00	30.00	40.00	50.00	60.00	75.00	90.00	125.00	150.00	200.00	250.00	300.00	360.00

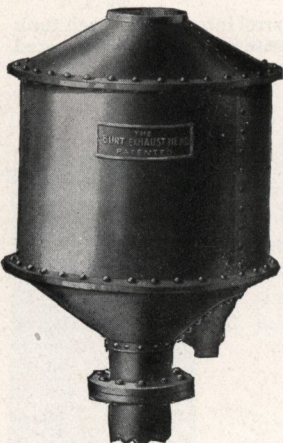


Fig. 2562. Full View

Size.....	1-1½	2-2½	3-3½	4-4½	5	6	7	8	9	10	11	12	13	14	15	16
Height.....	16	18	20	27	29	31	36	39	43	46	46	48	51	56	59	62
Diameter.....	10	12	14	16	18	20	22	24	26	30	30	32	34	36	39	42
Drip.....	1	1	1	1	1¼	1¼	1¼	1½	1½	2	2	2	2	2	2	2
Weight, pounds.....	18	18	35	49	72	90	95	125	160	182	182	270	305	385	500	559
Each.....	8.00	10.00	12.00	16.00	20.00	24.00	30.00	36.00	42.00	50.00	50.00	60.00	70.00	80.00	94.00	100.00

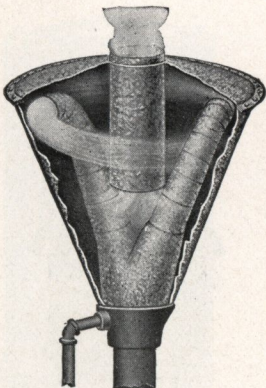


Fig. 2563
Sturtevant Exhaust Head
Sectional View

In construction, the Sterling Head is similar to the interior view of Fig. 2563.

Sizes up to and including 5 inch are tapped with standard pipe thread. Larger sizes are provided with flanges, drilled A. S. M. E. standard.

They are constructed entirely of Galvanized Sheet Steel, except the cast iron fittings on the bottom, and are well riveted and soldered, and all heads are proportioned to secure the best results.

Swartwout Cast Iron Exhaust Head

Centrifugal force is the distinctive feature of this exhaust head. It keeps the water and oil off the roof and permits free and unrestricted discharge of the exhaust steam. The cast iron construction insures a light and ornamental head, and one which is practically indestructible.

Sizes 5 inch and smaller are threaded. Larger sizes have standard flanges. Companion flanges are included on sizes 6 to 16 inch.

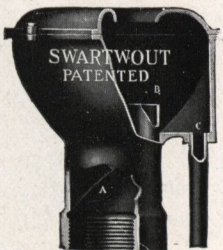
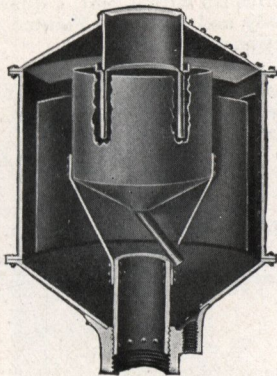


Fig. 2561
Swartwout Exhaust
Head

The Burt Exhaust Head

Operation

The exhaust steam delivered through the pipe strikes the drum immediately over the inlet; this breaks up the steam into the smallest particles, condensing some of the vapor. The greatest volume rises to the small projector, is cast over to the flange, then forced down the inner wall, and coming out of the opening again rises to the top of the head and seeks its way out at the outlet pipe. When it comes in contact with cold air it is condensed into water, which drips down the wall, is caught on trough-shaped lugs, drips down the tubes which carry it to the outlet pipe and then out through the drip. These trough-shaped lugs are protected by patents; no other exhaust head can use this device without infringement. Heads up to 5 inch have screw base. Larger than 5 inch have flanged base.



Interior View

Sizes, Dimensions, List Prices

Size.....	1-1½	2-2½	3-3½	4-4½	5	6	7	8	9	10	11	12	13	14	15	16
Height.....	16	18	20	27	29	31	36	39	43	46	46	48	51	56	59	62
Diameter.....	10	12	14	16	18	20	22	24	26	30	30	32	34	36	39	42
Drip.....	1	1	1	1	1¼	1¼	1¼	1½	1½	2	2	2	2	2	2	2
Weight, pounds.....	18	18	35	49	72	90	95	125	160	182	182	270	305	385	500	559
Each.....	8.00	10.00	12.00	16.00	20.00	24.00	30.00	36.00	42.00	50.00	50.00	60.00	70.00	80.00	94.00	100.00

Sturtevant Exhaust Head

The Sturtevant Centrifugal Exhaust Head utilizes one of nature's simplest laws in separating mingled oil and moisture from exhaust steam, namely, centrifugal force. As water weighs about 1600 times as much as an equal volume of steam, it is but necessary to impart a slight whirling action through the steam to cause the oil and moisture to be separated by the action of centrifugal force. This is the only means used to secure positive separation in the Sturtevant Exhaust Head, and the simplicity of its operation is shown in our illustration, from which it will be seen there are no complicated interior baffles, inner shells, etc., to produce back pressure on the engine.

Built throughout of heavy galvanized iron, 12 to 20 gauge; internal parts are double braced and external joints close riveted and soldered. Sizes 5 inches and smaller, screwed. Larger, flanged A. S. M. E. standard.

Size.....	1-1½	2-2½	3-3½	4-4½	5	6	7	8	10
*Weight.....	18	28	48	72	78	116	143	186	286
Each.....	20.00	25.00	30.00	40.00	50.00	60.00	75.00	90.00	125.00

Size.....	12	14	16	18	20	22	24	30	36
*Weight.....	350	429	550	700	812	1200	1350	2500	4000
Each.....	150.00	200.00	250.00	300.00	360.00	450.00	600.00	900.00	1200.00

*Weight, pounds, not packed.

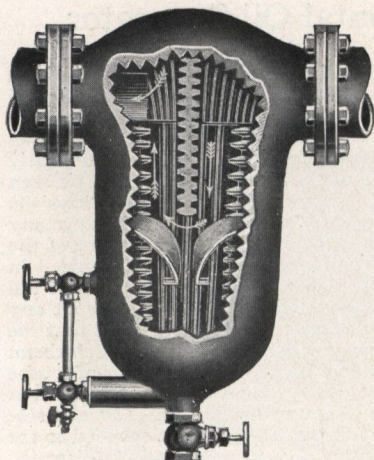


Fig. 2570
Hine Eliminator,
Horizontal Type

The Hine Eliminator

When placed in the main steam line close to the engine the Hine Eliminator is a safeguard against water of condensation reaching the cylinder and wrecking the engine. When placed in the exhaust line within 10 feet of the engine it will extract the oil held in suspension, cleansing the condensation suitable for boiler feed or any other purpose. This Eliminator showed an efficiency of $98\frac{7}{10}$ per cent. in the famous Cornell University test. Our regular patterns are designed for a working pressure up to 100 pounds.

Heavier patterns suitable for working pressure up to 175 pounds at an advanced price.

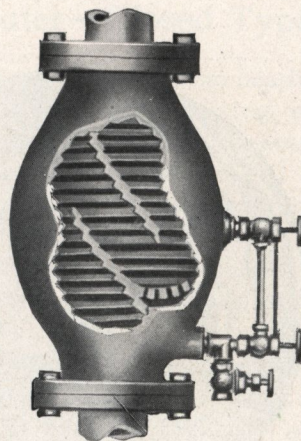


Fig. 2571
Hine Eliminator,
Vertical Type

Horizontal Pattern

Size of Pipe.....	1	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8	10	12
Face to Face.....	10	10	10	10⅞	10⅞	14¼	14¼	16½	16½	17¾	17¾	20¾	20¾	24¾	28¾
Top to Center.....	2½	2½	2½	3	3	3¾	3¾	3¾	3¾	4	4¾	6¾	6¾	8¼	11¼
Center to Bottom....	12⅞	12⅞	15	19	19	21¼	21¼	22½	22½	23	23¾	27	27	31¼	33¾
Size of Drip.....	¾	¾	¾	¾	¾	1	1	1	1	1¼	1¼	1¼	1¼	1½	1½
Price.....	20.00	20.00	25.00	30.00	35.00	45.00	52.00	64.00	72.00	83.00	104.00	120.00	145.00	185.00	225.00

Vertical Pattern

The Vertical pattern is built on the same general principle as the Horizontal and is largely used for live steam purposes, placed immediately over the throttle. In many lines of exhaust pipe it is also more convenient to use than the Horizontal.

Size of Pipe.....	1	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8	10	12
Face to Face.....	16½	16½	20⅞	21	21	22	22	26½	26½	28½	28½	36	36	43¾	50
Diameter of Body.....	8	8	8¾	11¼	11¼	12¼	12¼	15¼	15¼	17¼	17¼	20¼	20¼	28	34
Size of Drip.....	¾	¾	¾	¾	¾	1	1	1¼	1¼	1¼	1¼	1½	1½	1½	1½
Price.....	20.00	20.00	25.00	30.00	35.00	45.00	52.00	64.00	72.00	83.00	104.00	120.00	145.00	185.00	225.00

Prices include Companion Flanges, Bolts and Water Gauge.

In Attaching and Using the Hine Eliminator

First.—See that the inlet of the Horizontal Eliminator is on the side indicated by the letter I for inlet.

Second.—Where the Eliminator is used on exhaust for extracting oil, locate, if space permits, from 10 to 15 feet away from the engine or pump, and if the engine is high speed, or if the combined exhausts from two or more engines pass through it, get further away if possible. It is best not to cover the Eliminator when used on the exhaust pipe as an oil extractor.

Third.—When used for separating water from live steam, locate as close to the engine, pump or other point of delivery as possible. In this application it should be covered to avoid all possible condensation.

Fourth.—Place valve well down on the drip pipe. The object in putting on the gauge glass is to show that no water accumulates in the body of the Eliminator. It is therefore all important that the valve, while in operation, be kept open far enough to let off the dirty water and oil, and when attached to live steam pipe for separating water it is best the drip should be carried into a Nason Trap, and valve left wide open. The valve being open will provide for any carrying over of water, and a Nason Trap will prevent loss of steam.

National Horizontal Oil Separator



Fig. 2580

The National Oil Separators embody all of the effective principles both as to design and construction, that ensure complete separation of oil from exhaust steam. Gravity, impact and change of direction are used to eliminate the oil from the steam, and properly disposed baffles prevent its being picked up and carried along. The illustration clearly shows the design and construction of the Separator. It will be seen that the internal area of Separator is unusually large. This allows the incoming steam to expand and reduce in velocity to a point where any thing heavier than the steam, such as oil or water, will fall out of the current by gravity. Any minute particles, which may be carried in the current of steam, impinge on the main-baffle, which extends the full width of the Separator and has ribs vertically spaced to prevent any side travel. Through the baffle are a series of ports, so located that the steam must make a right angle change in direction to approach them. Each port is protected by an individual baffle, which consists of a tube cast on the main baffle at the port opening, and extends to the front wall of the Separator. Each tube has an opening on the back side equal to the area of its port. This forms a wall of metal opposed to the approaching current of steam, causing a further change in direction and absolutely preventing any oil being carried by into the outlet chamber beyond the main baffle plate. The arrangement of ports with their individual baffles is a distinctive feature of the National Oil Separator. The area of ports through baffle plate is one and one-half times greater than inlet pipe, and their location is such that no friction or drop in pressure is caused.

Note: Water Gauge Fittings and Drip Valve are furnished with each Separator, but no Companion Flanges. Flanges are faced and drilled A. S. M. E. Standard unless otherwise stated.

Sizes, Dimensions, List Prices, Etc.

Size	Diameter Flange Inches	Outside Diameter Inches	Face to Face Flanges	Center to Top Inches	Center to Bottom Inches	Size Drip Inches	List Price
3	7½	16	11	6½	9½	¾	34.00
3½	8½	18	11¾	7½	10½	¾	36.00
4	9	20	13	8	12	1	42.00
4½	9¾	22	13¾	9	13	1	48.00
5	10	24	14½	9½	14½	1	56.00
6	11	27	15	10½	16½	1	66.00
7	12½	29	16	11½	17½	1¼	79.00
8	13½	31	17	12½	18½	1¼	88.00
10	16	35	19	14½	20½	1½	120.00
12	19	39	21	16½	22½	1½	150.00
14	21	43	23	18½	24½	1½	240.00
16	23½	48	25	21	27	1½	320.00
18	25	54	26½	23½	30½	2	370.00
20	27½	60	29	26	34	2	480.00
24	32	72	31½	31	41	2	660.00

The Nason Feed Water Heater

For Exhaust Steam Only

This Heater is of the "Pot" type and is extensively used as a feed water heater for the smaller installations up to 70 horse-power. The shell is cast iron, flanged at top, with openings for exhaust inlet and outlet. The water to be heated is conveyed through a spiral iron pipe coil with inlet and outlet as shown in cut. Shell is also tapped near the bottom for the removal of condensation.

This heater is recommended for any condition requiring hot water, where exhaust steam is available.

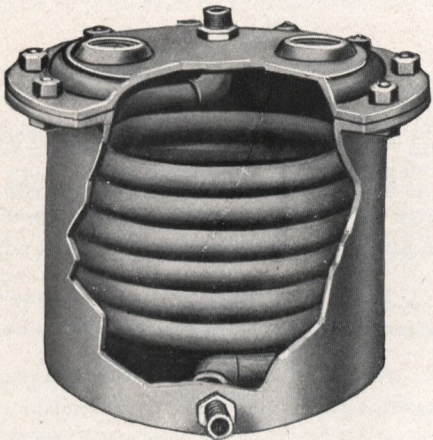


Fig. 2581

Nason Feed Water Heater

Number.....	1	2	3	4	5
Size Pipe Coil.....	¾	1	1¼	1½	2
Feet Pipe in Coil.....	15	17	24	35	46
Diameter Cylinder, inches.....	12¼	14¼	16¾	20¼	24
Height Cylinder, inches.....	12	14	16½	20	24
Exhaust Openings, inches.....	2	2½	3	4	5
Horse-power.....	10	20	30	50	70
Weight, Each, pounds.....	75	138	200	330	700
Price.....	20.00	30.00	45.00	80.00	130.00

National Feed Water Heater—Closed Type

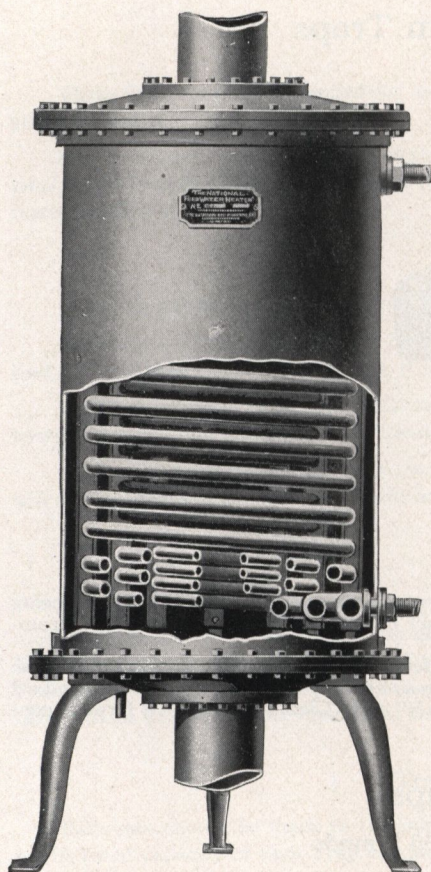


Fig. 2590. National Heater

The fuel saved is the most easily measured gain from heating feed water with exhaust steam. This is a definite saving, expressed in terms of coal used. It amounts to about 1% for every 11° added to the feed water temperature; or, looking at it in another way, throwing away exhaust steam, which contains about 85% of the heat in live steam, and feeding cold water is a distinct and calculable loss, because fuel must be consumed in heating the water up to the temperature at which vaporization must take place.

The National Feed Water Heater is very simple and free from complications. It is made up of a coil of seamless drawn brass or copper tubing within a vertical containing shell. Openings are provided for getting steam into and out of the shell and suitable connections for the water to flow through the coil. To handle a large quantity of water and yet have the heater of relatively small size, several coils (2 to 14) are put into the shell, dividing the water into numerous small streams, which heat quickly.

This adds greatly to the efficiency of the National Heater, which is in itself very high, because brass and copper transmit heat more quickly than any other metal used commercially, and 500 times as fast as water.

The National Closed Heater presents the further advantage of feeding the water at the maximum temperature of the heater; the water goes direct to the boiler; it is not cooled by being picked up by a pump. Furthermore, the feed pump handles cold water instead of hot water with its vapors, as in the case of an open heater.

Sizes, Dimensions, List Prices, etc.

No.	List Price	*Nominal Horse-power	Feed Pipe Inches	Exhaust Pipe Inches	Height Heater Inches	Height Legs Inches	Diameter Shell Inches	Diameter Over Flange Inches	Weight Pounds
05	20.00	5	1½	2	10½	....	5	7	30
1	25.00	10	1½	2	12	....	8	11	60
1½	35.00	15	1½	2½	17	....	8	11	70
2	50.00	20	¾	2½	18	....	12	16	175
2½	60.00	25	1	3	20	....	14½	19	260
3	75.00	30	1	4	21½	12½	16	20	350
4	90.00	40	1	4	23	12½	16	20	370
5	110.00	50	1	4	28½	12½	16	20	400
6	130.00	60	1	4	33½	12½	16	20	450
8	160.00	80	1	4	38½	12½	16	20	475
10	180.00	100	1¼	5	40½	14	18	22	750
12	210.00	120	1½	5	40½	14	18	22	800
15	250.00	150	1½	8	45	15	21½	26	1100
20	325.00	200	2	8	55	15	21½	26	1275
25	400.00	250	2	8	61	15	21½	26	1450
30	500.00	300	2	8	69	15	21½	26	1600
40	600.00	400	2½	10	70	18	29	36	2175
50	750.00	500	2½	10	84	18	29	36	2375
60	900.00	600	3	12	79	22	35	42	3200
70	1050.00	700	3	12	83	22	35	42	3300

*Actual horse-power ratings depend on local conditions and will be quoted on application.

Larger sizes quoted on application.

Sizes No. 05, No. 3 and above have exhaust inlet in bottom and outlet in top heads unless ordered otherwise.

Size of exhaust can be varied to suit requirements.

Two or more exhausts in bottom head if necessary.

Shells Nos. 05 to 30 are cast iron.

The Nason "Class B" and "Class C" Steam Traps

For Ordinary Pressures



"Class B" and "Class C" Type

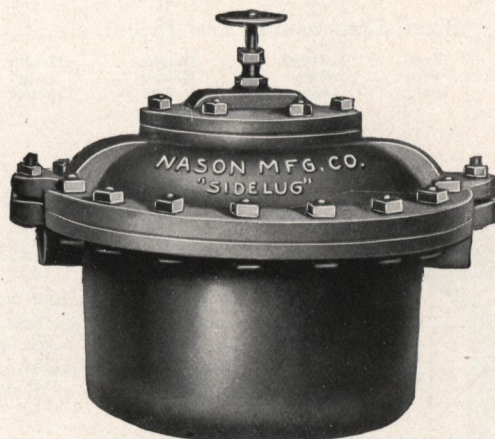
The Steam Traps manufactured by the Nason Manufacturing Company have always enjoyed the reputation of being the best of their kind—more extensively known and used than any other—in fact the standard of excellence with steam-fitters and engineers throughout the world.

To better adapt our traps to the varying pressure conditions, it has been found advisable to divide them into three groups, one for ordinary working steam heating pressures of 1 to 20 pounds, designated as "Class B"; one for standard operating pressures of 20 to 70 pounds, designated as "Class C." In the "Class B" and "Class C" Traps the form of construction is the same, except in the area of the working valve or "Sleeve Seat."

The "Sidelug" Steam Traps

For Working Pressures Between 40 and 150 Pounds

Patented, January, 1900



"Sidelug" Type

For higher pressures a radical departure in construction of the covers has been designed and patented, consisting of so reinforcing the joints at the inlet and outlet where the steam ports pass from pots to covers, that leakage at or near these points cannot occur, there being no possibility of the gaskets blowing out.

A considerable increase in the size and number of bolts used has been adopted, thus rendering these Traps not only amply equal to the greater pressure imposed upon them, but infinitely better than anything hitherto made in this class of trap. These Traps are known as the "Sidelug" Trap, and should be universally specified in all cases where they are to be used under pressures constant at or exceeding 71 pounds.

For facility of access to the sleeve seats and sleeves, the two larger sizes (Nos. 4 and 5 as shown in illustrations) in the "Class B," "Class C" and "Sidelug" Patterns, are fitted with hand-hole plates on the covers, which permit of readily getting at the working parts without breaking the main joint.

The "Class B," "Class C" and "Sidelug" Steam Traps

Standard Service

These Traps are recommended for any service requiring the removal of water of condensation without escape of the steam behind it.

For draining the condensation from steam pipes, coils and apparatus employed in steam heating, steam kettles, vacuum pans, mash kettles, steam engine supply pipes and separators, evaporating pans, steam jackets on engines and pumps, ice machine stills, etc.

Pressure Conditions

In ordering these Traps it is important that the steam pressure under which they are to be used should be noted.

The "Class C" Trap is designed for a maximum pressure of 70 pounds, but where this pressure is to be constant, or likely at any time to exceed this limit, it is necessary to use the "Sidelug" type.

Where the Trap is to be used under extreme low pressure conditions (1 to 20 pounds), such as usually obtain in steam-heating systems, the "Class B" type should be specified.

All Traps issued by us bear tags specifying the pressure for which their Sleeve Seats are fitted. Satisfactory results will not be obtained unless these details are strictly followed.

Trap Connections

In selecting a Steam Trap of the "Class B," "Class C," or "Sidelug" pattern for a given duty it should be borne in mind that the size of the inlet in no way governs the capacity of the Trap, as the full area of the inlet is only used when the Top Valve is opened for the purpose of "blowing" through in starting. It will be seen, therefore, that the pipe entering Trap at "inlet" may be arranged to suit our standard connections without affecting the operation of the Trap—care being taken that a Trap of proper capacity is selected for the work.

Trap Capacity—Conservative Ratings

Reference should be made to the table of Sizes and Capacities, and the size Trap selected which nearest corresponds to the rated capacity of each Trap in square feet of surface, or in lineal feet of one inch pipe.

The capacities specified in our table are based upon the condensation discharged from radiators, wall coils, or similar surface, operating under usual conditions found in a direct heating system.

Where Traps are to be used under conditions varying from those found in a direct coil heating system, such as coil surface under air blast, indirect or submerged surface, sugar pans, steam kettles, evaporators, separators, etc., the ratings given in our table should not be used.

Trap Capacity—Special Ratings

In adopting a basis for our capacity ratings, a conservative limit was deemed advisable, with a view of prolonging the integrity of the working parts. It should therefore be borne in mind that the rated capacities, under many conditions, can be very largely increased, and correspondence regarding such special conditions is invited.

Interchangeability of Parts

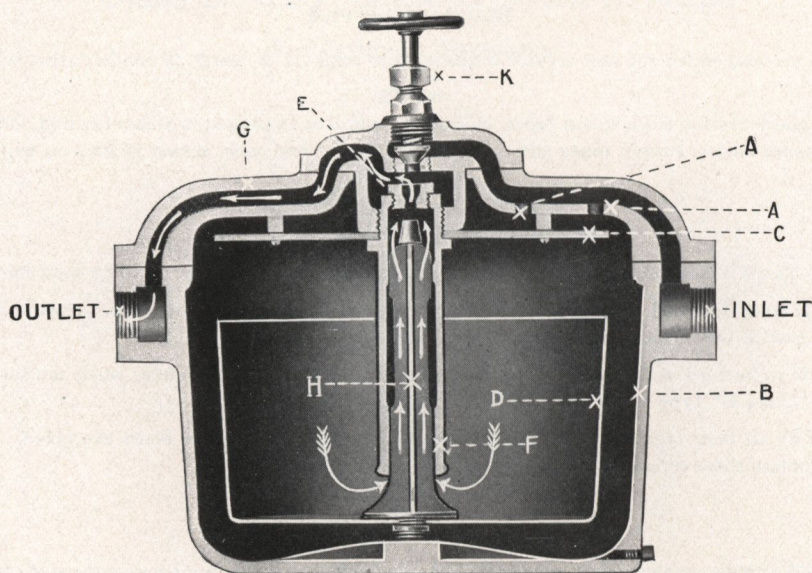
In the "Class B," "Class C" and "Sidelug" Traps all parts are interchangeable, being made in special machinery designed for the purpose; parts which may require renewal can therefore be ordered with the certainty that they will accurately fit and duplicate the originals.

This feature is not possessed by the spurious imitations.

Avoid Substitution

All Traps manufactured by us bear the name "Nason Manufacturing Company" on their covers, and purchasers are requested to insist on this mark, as several inferior and light imitations are on the market which are in many cases openly offered and sold as "Nason" Traps. These spurious imitations are deficient in boltage, and often distinctly unsafe under the high pressure conditions which now so generally obtain, and the general dissatisfaction resulting from their use is causing prejudice against those of our manufacture.

The Nason "Class B," "Class C" and "Sidelug" Steam Traps



Construction

A cast iron reservoir or pot B closed with a cover G provided with two cored passages contains an open float D which is fitted with a ribbed spindle H for its guidance. A housing or sleeve F is screwed centrally into the under side of the cover G, and within it the spindle H slides smoothly, permitting a short vertical motion. The top of the spindle H is ground flat and its upward movement is arrested by coming in contact with the bronze plug E, having a central opening, the two surfaces thus constituting a discharge valve for these Traps.

One of the cored passages in the cover alluded to is for the discharge of water from the trap after passing through the valve E, and the other serves as a by-pass, to permit any large volume of air or water to be blown through, when starting, without going through the discharge valve. Valve K gives entire control of this action.

Operation

The trap being so placed that the water of condensation flows into it by gravity, the discharge enters at the point marked "Inlet" and passing through the cored openings AA into the body of the Trap B, a diaphragm C above the float D diverts the water of condensation into the pot or body of the Trap B, where, gradually rising, it raises the float D, thereby closing the discharge valve E. Valve K being closed, discharge from the Trap is shut off and remains so until the float D becomes nearly filled from the overflow of water into it, when its weight becomes such that it overcomes the tendency of the discharge valve E to remain closed, being held there by steam pressure, and it drops to the bottom, thereby opening the discharge valve E. Acting on the surface of the water, the steam pressure immediately drives it up through the sleeve F (as indicated by arrows), through the discharge valve E, and thence by way of the cored passage to the "outlet."

When the float D has been nearly emptied it becomes so light that it is again raised by the water surrounding it, thus closing the discharge valve E, and the operation is repeated. The weight of the float D is such that a permanent water seal always remains over the point of discharge into the sleeve F, thus preventing escape of live steam when the discharge valve E is open.

From the above description it will be observed that the valve action is purposely intermittent, which necessitates that it shall be either wide open or completely closed, an advantage which entirely obviates the wire-drawing process to which all traps of the continuous discharge type are subject. The life of the valve is thus definitely prolonged and danger of leakage at this point reduced to a minimum.

"Class B," Class C" and "Sidelug" Steam Traps

Directions for Setting and Operating

Pressure and Capacity

Be sure that the Trap is of proper capacity and that the pressure conditions under which it is to be connected conform to the pressure range marked on its tag. Each Trap is tested and guaranteed for its respective duty.

Top Valve

Screw the Top Valve which accompanies the Trap into the threaded opening in cover, taking care before so doing that the spindle is backed out as far as possible in order to avoid crushing the seat with the disc.

Position

Place the Trap in all cases below the lowest point to be drained and see that it is carefully leveled.

Connecting

Connect the lowest point in the drain line with the tapping marked "Inlet." The Trap being of proper capacity, the pipe connection can be made the same size as the trap inlet, for the inlet size does not determine the capacity of the Trap.

Blowing Out

In starting, open the Top Valve for a short period to allow any accumulation of air or water to escape. If the work is new it should be thoroughly blown out before the trap is connected, in order to clear the system of scale or dirt likely to lodge in the valve mechanism and cause leakage.

"Air-Bound"

As soon as steam begins to flow through the by-pass, close the top valve tightly, and keep it so as long as the trap is in operation. Should the coils become cold while the pressure is on, or should the Trap suspend normal operation for any length of time, this condition is probably due to an accumulation of air in the coils, and can be remedied by opening the top valve for a short time until the air is released. Then close it.

Special Conditions

Under certain conditions, where steam pressure is high and the condensation slight, it is sometimes difficult for the Trap to intercept sufficient condensation to actuate the float and close the discharge valve. Should the trap, therefore, continue to discharge steam for any length of time, when first connected, it is advisable to shut it off, remove the Top valve and fill the pot with water.

Steam Leakage

While the Trap is discharging, there is usually considerable steam vapor given off by the outgoing water. This vapor is not due to valve leakage, but to the fact that the water is discharged into the atmosphere at a temperature greater than 212 degrees, and this vapor will continue to rise from the water until it cools to a temperature less than the boiling point.

Elevating the Discharge

This Trap will elevate water on its discharge side 20 inches for each pound pressure on the inlet side. It must be remembered that the greater the back pressure on the discharge, the more sluggish will be the action of the Trap. Consequently, it will not always run up to its rated capacity. When called upon to elevate the discharge, we recommend the use of a Trap one size larger than would ordinarily be used, to insure ample capacity.

This Trap is not intended to return water to the boiler, being of the non-return type.

Freezing

If the apparatus or Trap is to be left inoperative at any time when the temperature is likely to go below the freezing point, remove the plug at the bottom in order to allow the water contained in the pot to drain out, thus avoiding injury to the Trap.

Nason Steam Traps

“Class B”

Steam Traps are designed for the low pressure conditions which are usually found in steam heating plants.

Its construction embodies the original Nason principle shown in sectional illustration on page 262.

In the “Class B” Trap the area of discharge Valve E is enlarged to permit the rapid discharge of water under the low pressures for which it is designed, and this type should be universally ordered where pressures are



Fig. 2640
“Class B” Type
Pressures 1 to 20 pounds



Fig. 2641
“Class C” Type
Pressures 20 to 70 pounds



Fig. 2642
“Sidelug” Type
Pressures 40 to 150 pounds

Between 1 and 20 Pounds

Size Number.....	1	2	3	4	5
Pipe Connections, inches..	1½	¾	1	1¼	1½
Feet 1-inch Pipe.....	1500	3450	5250	7650	12000
Each, “Class B”.....	16.00	20.00	27.50	42.50	70.00
Code Word, “Class B”....	Bevel	Battle	Biter	Bracket	Bruno

See complete table bottom of page.

“Class C”

Steam Traps are designed for standard service conditions, where the working steam pressure does not exceed 70 pounds.

The principle employed in its construction is identical with the sectional illustration on page 262.

In the “Class C” Traps the area of the discharge Valve E is reduced to suit the pressure conditions for which it is designed and this type should be specified where pressures are

Between 20 and 70 Pounds

Size Number.....	1	2	3	4	5
Pipe Connections, inches..	1½	¾	1	1¼	1½
Feet 1-inch Pipe.....	1500	3450	5250	7650	12000
Each, “Class C”.....	16.00	20.00	27.50	42.50	70.00
Code Word, “Class C”....	Neva	Nina	Nordau	Nolly	Novice

See complete table bottom of page.

“Sidelug”

Steam Traps present the same working principle as shown on page 262, but being designed for pressures higher than 70 pounds, there has been a radical departure in the construction of the covers, consisting of a reinforcing “lug” over the inlet and outlet, where the steam ports pass from pot to cover, so that leakage at or near these points cannot occur, there being no possibility of the gaskets blowing out.

A considerable increase in the size and number of bolts used has been adopted, thus rendering these traps not only amply equal to the greater pressure imposed upon them, but infinitely better than anything hitherto made in this class of trap. The “Sidelug” Trap should be universally specified for pressures that are

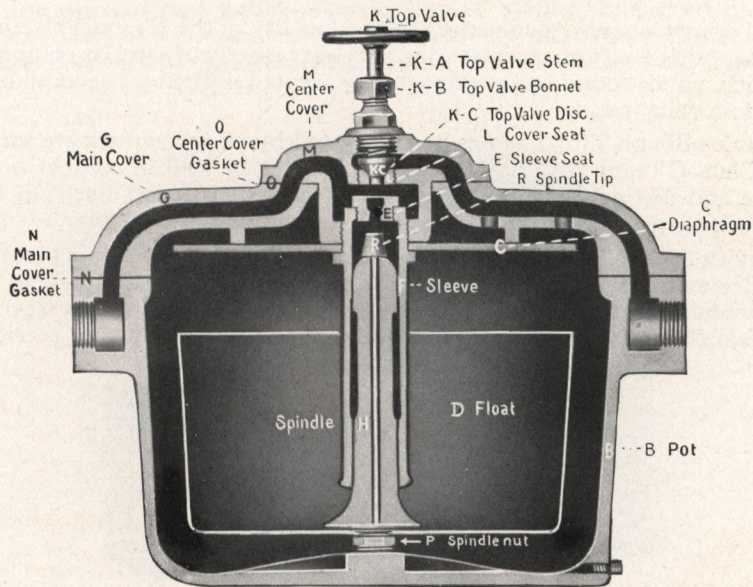
Between 40 and 150 Pounds

Size Number.....	1	2	3	4	5
Pipe Connections, inches..	1½	¾	1	1¼	1½
Feet 1-inch Pipe.....	1500	3450	5250	7650	12000
Each, “Sidelug”.....	16.85	21.30	29.25	45.50	74.75
Code Word, “Sidelug”....	Stellar	Starry	Stamen	Stiple	Story

Table of Dimensions, Capacities and Weights

Number.....	1	2	3	4	5
Size of Pipe Connections, inches..	1½	¾	1	1¼	1½
Diameter Outside of Flanges, inches.....	10¾	14¼	15¾	19	24¼
Diameter of Cylinder, inches.....	8	10½	12	14	18
Height to Top of Valve, inches.....	11	14	16¼	18½	23½
Height to Top of Cover, inches.....	8	10	12	14	15½
Nominal Discharge Pounds Water per Minute.....	4½	6½	10	15½	23
Nominal Square Feet of Surface.....	500	1150	1750	2550	4000
Nominal Lineal Feet of 1-inch Pipe.....	1500	3450	5250	7650	12000
Weight, “Class B” and “Class C,” pounds.....	40	80	113	176	336
Weight, “Sidelug,” pounds.....	47	92	125	212	343

Repair Price List for "Class B," "Class C" and "Sidelug" Steam Traps



Cross Section Showing Names of Parts

Repair Price List for "Class B," "Class C" and "Sidelug" Steam Traps

Size	Number of Trap	1	2	3	4	5
K	Top Valve Complete	1.00	1.40	1.60	2.00	2.10
KA	Top Valve Stem only	.50	.60	.70	.70	1.00
KB	Top Valve Bonnet only	.35	.40	.45	.45	.65
KC	Top Valve Disc (No. 5 only)					1.00
L	Cover Seat	.40	.40	.60	.70	.80
M	Center Cover				3.50	4.00
O	Center Cover Gasket				.25	.40
G	Main Cover	2.40	3.60	5.00	8.20	15.60
N	Main Cover Gasket	.25	.40	.60	1.20	1.70
R	Spindle Tip (No. 5 only is detachable)					.80
H	Spindle	1.00	1.40	1.70	2.50	3.50
F	Sleeve	1.20	1.60	2.00	2.70	4.50
E	Sleeve Seat	.30	.40	.50	.60	.70
C	Diaphragm	.30	.50	.60	1.20	1.60
D	Float	.80	1.00	1.00	2.00	2.50
B	Pot	3.00	4.50	7.00	10.50	18.80
P	Spindle Nut	.30	.30	.30	.40	.40

In Ordering Repair Parts

Note whether the trap in service is lettered on the cover similar to any one of the diagrams shown below, and specify whether parts are for "Class B," "Class C," or "Sidelug."

Should the cover bear our name and no classification, it merely indicates that the trap was made before the adoption of our present classifications. All parts of these traps can be duplicated, but working pressures should be specified to enable us to furnish valve areas suited to the conditions.

If our name does not appear on the cover of the trap, it is an imitation, not manufactured by us, and therefore the heavier and more massive parts employed in the Genuine Nason Construction will not interchange, and duplicates should not be ordered from us.



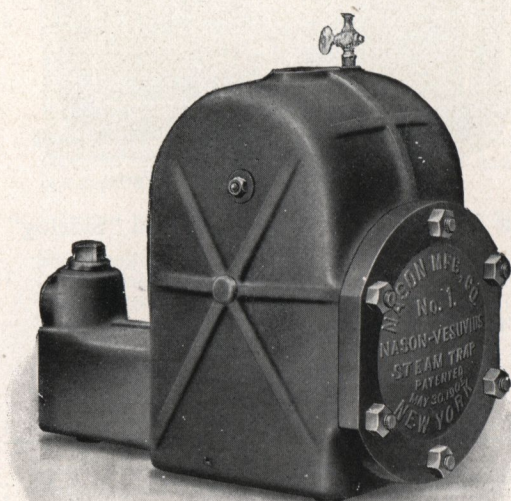
The Nason-Vesuvius Steam Trap

(Non-Return)

The engineer will appreciate at a glance the practical utility of the Nason-Vesuvius Steam Trap; its extreme simplicity; its positive action; its re-seating valve arrangement, and its comparatively unlimited capacity—details which will be found more exhaustively treated in the text accompanying our sectional illustrations on the following pages.

The Nason-Vesuvius Steam Trap has not been adopted by us as a substitute for the widely known Nason "Class B," "Class C" and "Sidelug" Traps, nor will it be sold in competition with them. Its principle is so unique and distinctive as to place it in a class entirely by itself, in that it can readily be adapted for all working pressure conditions from 1 to 250 pounds.

The Nason Vesuvius Steam Trap, with several important improvements, is placed upon the market with the full confidence and prestige of the Nason Manufacturing Company behind it. As students of trap problems, and manufacturers of steam traps, covering a period of nearly seventy years, we feel that the most skeptical should not hesitate to share our confidence in the merits of the "Nason-Vesuvius."



Nason-Vesuvius Steam Trap
Patented May 30, 1905, and January 5, 1915

To command and retain popularity the construction and operation of a steam trap must be such that it can be intelligently understood by every practical mechanic.

Simplicity of design; accessibility; the ready removal and replacement of all working parts are details of vital importance.

It is equally important that the trap be so constructed as to arrive at destination, however remote, in condition to be placed in immediate commission without the annoyance and delay of overhauling and replacing parts broken or injured in transit.

The design of the Nason-Vesuvius Steam Trap embraces all of these features, with the further advantage of being practically indestructible in its working parts, requiring the minimum of care and attention for operation and repairs.

As heretofore constructed, devices of this character have been designed to permit the condensation to escape slowly, either intermittently or continuously, through a small aperture formed between an outlet valve and its seat.

The common objection to these types is the clogging of the small orifice, especially under low pressures, and the rapid wear of the valve surface under high pressures, resulting in unreliability of operation and the rapid development of wasteful leaks, aside from the restriction of capacity due to the small discharge aperture.

The Nason-Vesuvius Steam Trap

In designing the Nason-Vesuvius Steam Trap, our object has been to introduce a form of construction in which the discharge or outlet passage, having ample dimensions, is instantly and fully opened when the water reaches a certain level, and is suddenly and accurately closed when the desired quantity of water has been discharged; and at the same time to present a construction which, while simple and reliable in operation, is the least likely to get out of order.

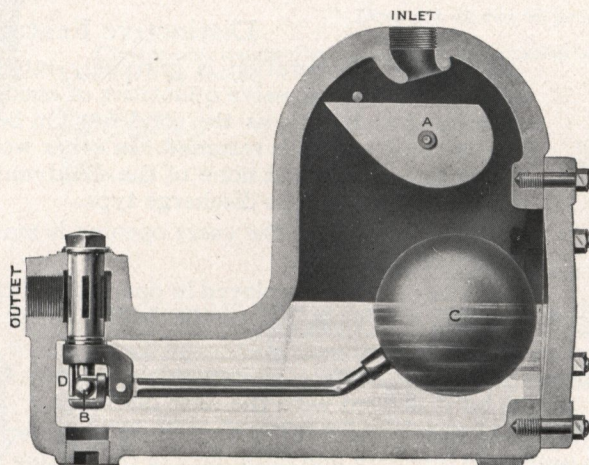


Fig. 1. Sectional View showing Bucket in Receiving Position, Valve Closed

As will be observed from our illustrations, the Nason-Vesuvius Trap differs radically from any other type of steam trap now offered.

Its operation is briefly described as follows:

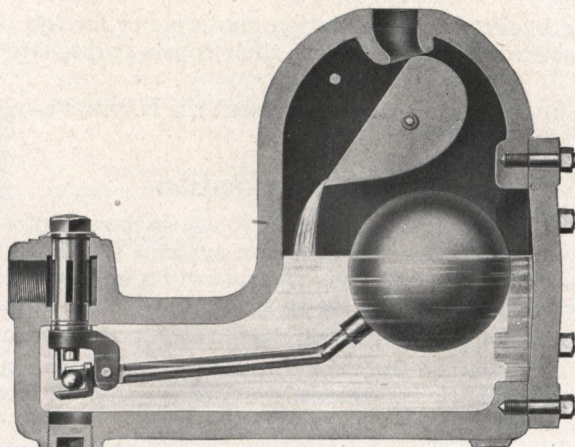


Fig. 2. Sectional View showing Bucket Dumping, Valve Discharging

Operation

When the trap is placed at the lowest point to be drained, connection is made at "inlet" (see Fig. 1), the outlet being closed by the ball valve B. The incoming water is received in the copper tilting bucket A, pivoted in the dome of trap, the bucket being so balanced that when filled with water it tips, instantly precipitating its contents into the main body of water (see Fig. 2). The quick upward impulse imparted to the float C by this discharge removes the ball from its seat. This instantaneous action of the ball in leaving its seat allows a clear free-way for the discharge.

In closing, the float follows the receding water level and gradually returns the ball toward its seat until a predetermined level is reached. At this point the pressure "picks up" the ball and instantly seats it, thus closing the discharge orifice, until the above described operation is repeated.

The Nason-Vesuvius Steam Trap

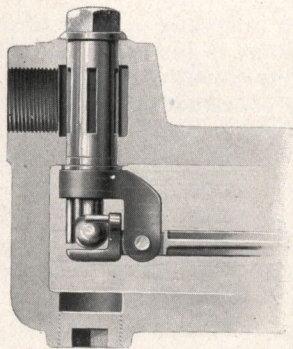


Fig. 3
Enlarged Valve Detail

As will be observed from the large detail of valve (Fig. 3) the ball is held in position by cage D (see Fig. 1, page 267). The stationary and movable pins comprising this cage are so arranged that a positive rotating motion is imparted to the ball with each discharge, thus offering a different surface of the ball at each seating.

Distinctive Features

The valve operation is purposely intermittent, but when called upon to remove excessive quantities of condensate the valve remains open until such time as the condensation becomes normal, when the intermittent action is resumed. In other words, the trap possesses all of the advantages and none of the disadvantages, such as wire drawing, of the continuous discharge type.

The full area of the valve opening is maintained during the entire period of discharge.

The principle employed in opening and closing the valve eliminates the erosive action or "scoring" by the discharge jet, as the ball is either entirely removed from its seat or rigidly held thereon.

The lodgment of scale on the valve surface is impossible, as any foreign substance the ball might intercept in closing would be dislodged with the next discharge.

The ball valve is positively regrinding, as a different surface is presented to the seat with each closure, insuring thereby an unlimited integrity and durability of the seating surfaces under all pressure conditions.

The form of construction permits the adoption of a discharge outlet of larger area than is practicable in any other type, insuring absolute immunity from clogging and ample capacity for maximum conditions.

The form of construction also permits the ready removal of all working parts, without breaking the pipe connections.

The action of the tilting bucket keeps in motion any scale or foreign particles entering the trap, thus preventing them from settling, and permitting their constant discharge without fouling the trap or impairing its mechanism.

For these and other less important reasons, we present the Nason-Vesuvius Steam Trap as entirely dependable in all its parts and in its entirety.

General Information

The Nason-Vesuvius Steam Traps are suitable for use in power plants, electric light stations, sugar refineries, breweries, mills, factories and in steam systems of all kinds where water and steam are to be separated with minimum loss of steam. Because of its large discharge orifice, it is especially adapted for conditions where large amounts of steam are used, with the attendant heavy condensation.

These traps will lift and discharge water 20 inches for each pound direct initial pressure.

As the condensed water is discharged from the trap at a temperature considerably higher than that at which water boils under atmospheric conditions, a vapor is given off from the water which should not be confused with leakage of steam through the valve.

No adjustment is necessary for various pressures, within limits of each Class.

The floats employed in Classes L and M of the Nason-Vesuvius Trap are specially constructed and tested under 300 pounds hydrostatic pressure. Class H floats to 400 pounds.

The valve seats are phosphor bronze, and the balls are a special bell metal composition.

Every trap is rigidly tested before leaving our works.

To examine or repair the Nason-Vesuvius Steam Trap requires but little time. It is only necessary to remove the cover, loosen the valve plug, and the working parts are instantly removed from the body. The orifice is screwed into the valve and can be unscrewed from the top with a taper drift-pin or mandril. The only parts likely to require renewal are the orifice and ball, which can be replaced at slight cost. Our sales of trap repairs during a period of eight years amount to approximately twenty dollars.

We invite your trap problems. In submitting them, kindly send rough sketch giving approximate dimensions, pressure conditions, amount of surface drained and any other helpful information.

Nason-Vesuvius Steam Traps

"Class L"

For Pressures Between 1 and 50 Pounds

The "Class L" group of Nason-Vesuvius Steam Traps is fully illustrated and described in the preceding pages. It is designed for the lower pressure ranges, and should be ordered only when the working pressure

Does not exceed 50 pounds

Dimensions, weights, extra parts, etc., see tables below. No. 3 Traps can be tapped 2 inches if so desired.

Trap Number.....	0	1	2	3
Pipe Connections.....	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$
Feet 1-inch Pipe.....	4800	7200	9300	12900
Each.....	28.00	35.00	42.00	50.00
Code Word.....	Lonaut	Lowun	Lowto	Lothre

"Class M"

For Pressures Between 50 and 150 Pounds

The "Class M" group of Nason-Vesuvius Steam Traps is also fully described in the preceding text and illustrations. "Class M" is designed for intermediate pressures, and should be ordered only when the working pressure range is

Not lower than 50 pounds, nor higher than 150 pounds

Dimensions, weights, extra parts, etc., see tables below. No. 3 Trap can be tapped 2 inches if so desired.

Trap Number.....	0	1	2	3
Pipe Connections.....	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$
Feet 1-inch Pipe.....	4800	7200	9300	12900
Each.....	28.00	35.00	42.00	50.00
Code Word.....	Menaut	Mewun	Metwo	Methre

"Class H"

For Pressures Between 150 and 250 Pounds

The "Class H" group of Nason-Vesuvius Steam Traps embodies the same principle as already illustrated and described, but is of special heavy construction, with valve area suited for extreme pressures. This group of traps should be ordered when the working pressure range is

Between 150 pounds and 250 pounds

Dimensions, weights, extra parts, etc., see tables below. No 3 Trap can be tapped 2 inches if so desired.

Trap Number.....	0	1	2	3
Pipe Connections.....	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$
Feet 1-inch Pipe.....	4800	7200	9300	12900
Each.....	28.00	35.00	42.00	50.00
Code Word.....	Hinaut	Hiwun	Hitwo	Hithre

Price List for Extra Parts

Trap Number.....	0	1	2	3
Bucket.....	3.60	4.00	4.90	5.40
Float, Class L and M.....	4.90	6.00	6.70	8.00
Float, Class H.....	5.40	6.60	7.40	8.70
Float Lever.....	1.30	1.40	1.50	1.60
Valve, including Orifice.....	2.00	2.20	2.40	2.60
Valve Orifice, only.....	.50	.60	.70	.80
Valve Plug.....	1.40	1.70	1.90	2.10
Valve Ball.....	.20	.30	.50	.60

Dimensions and Weights

Trap Number.....	0	1	2	3
Length, inches.....	16	17	19	23
Width, inches.....	8	9	11	12
Height, inches.....	13	14	15	16
Height of Outlet, inches.....	5	5	6	6
Weight, Class L and M, pounds.....	64	93	116	145
Weight, Class H, pounds.....	82	112	145	177

Water Gauges

Traps are not tapped for, nor furnished with water gauges, unless so ordered. Gauges will be furnished at extra prices, as follows.

Water Gauges for Class L and M Traps, net, extra.....	1.25
Water Gauges for Class H Traps, net, extra.....	2.50

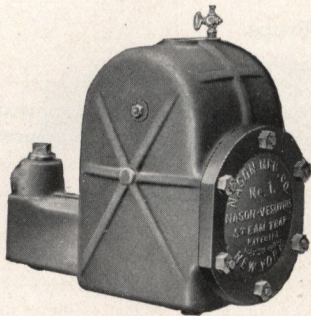


Fig. 2690. Class L

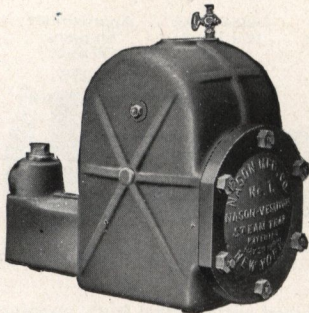


Fig. 2691. Class M

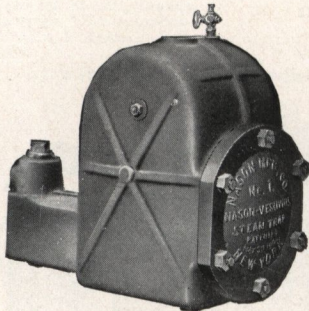


Fig. 2692. Class H

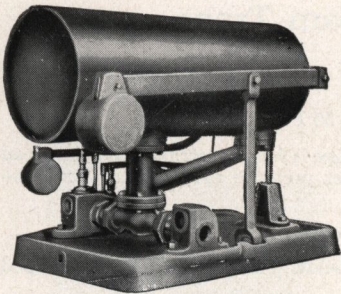


Fig. 2700. Detroit Return Trap

Return Steam Traps

“Detroit” Return Traps

For Boiler Feed and Water Lift

“Detroit” Return Traps are used for draining vacuum lines, and when so used, are designated as Vacuum Traps. Prices below apply, subject to advanced discount.

Note: Always advise Steam Pressure carried—this is important and should be specified on all inquiries and orders.

Price List and Capacity Table

Size Trap	List Price		Water Inlet and Outlet Inches	Size Steam Inlet Inches	Capacity				
	Trap Only	Receiver Only			Pounds Per Hour	Square Feet Direct Radiation	Lineal Ft 1-inch Pipe Direct Radiation	Lineal Foot Hot Blast Coil	Approximate Shipping Weight
10	80.00	45.00	3/4	1/2	960	3200	9600	1450	275
11	105.00	45.00	1	3/4	1500	5000	15000	2250	325
12	150.00	56.00	1 1/4	1	2500	8300	25000	3750	425
13	200.00	56.00	1 1/2	1 1/4	4000	13300	40000	6000	500
14	275.00	56.00	2	1 1/2	7500	25000	75000	11500	700
15	360.00	70.00	2 1/2	2	12000	40000	120000	17000	900
16	450.00	70.00	3	2	22000	73500	220000	33000	1000

Note: Trap prices include two swing check valves, but no globe valves, gate valves, or pipe fittings are included with the Traps.

“Detroit” Return Traps working at pressures from 125 to 175 pounds should be furnished with special high pressure tank and fittings. Add 10 per cent. to above prices. For pressures above 175 lbs.,=on application.

Albany Return Steam Trap—Class A, 1898 Pattern

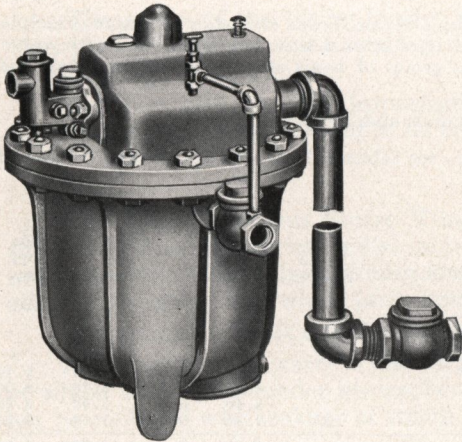


Fig. 2701. Full View

These traps will remove the condensed water from steam jacketed cylinders, steam separators, etc., using high pressure steam, and return the same water into the boiler direct without the aid of a pump or the steam loop, and they will do this from systems working under varying pressures from 10 to 250 pounds, returning the water at temperatures from 212 degrees to over 400 degrees.

It makes a good boiler feeder, taking the place of a steam pump in returning the water of condensation from a heating system located in another building, back to the central plant. It may also be used in place of a pump and receiver in returning the water of condensation from warming systems supplied with very low steam pressure.

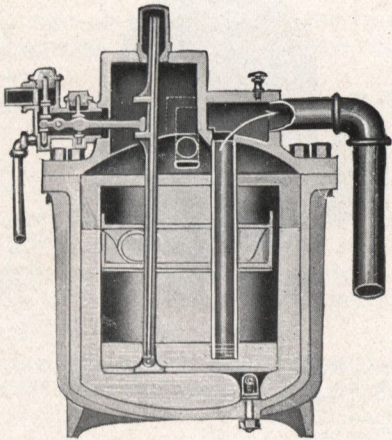


Fig. 2702. Section

Note: It is important to know whether the trap is to remove the condensation from coils in a tank; radiators in a direct steam heating system, or coils in an indirect or fan system. Always state the boiler pressure and the distance between the water line in the boiler and the lowest radiator or coil in the heating system. Bottom of trap should set about three feet or more above water line in boiler.

Albany Return Steam Traps—Class A

Size, Trap	No. A-2	No. A-1	No. 1	No. 2	No. 0
Capacity in Lineal Feet of 1-inch Pipe	30 to 50000	15 to 30000	8 to 12000	4 to 8000	250 to 500
Inlet, inches	2	1 1/2	1 1/2	1	1/2
Outlet, inches	2 1/2	2	2	1 1/2	1
Gallons Capacity per minute	15 to 25	10 to 15	4 to 8	3 to 6	1/2 to 1
Shipping Weights, Pounds	800	500	420	340	75
Each	300.00	200.00	150.00	100.00	50.00

Jenkins Diamond Expansion Trap

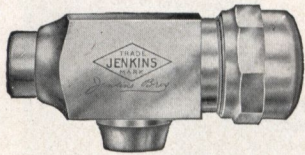


Fig. 2710. Diamond Expansion Steam Trap

A small and simple Steam Trap especially adapted for use on steam heating coils, steam jackets and kettles, heaters, and other places where there is a moderate amount of condensation to be removed without waste of steam.

It works on the same principle as the Jenkins Air Valve, having an adjustable plug of Jenkins Composition, made especially for this purpose. The Trap is perfectly automatic and when properly adjusted will remain open as long as water escapes, closing instantly when steam strikes the plug.

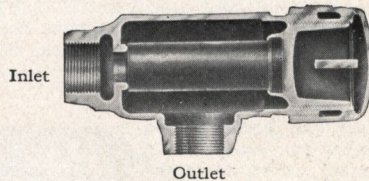


Fig. 2710. Interior View. Trap must be installed in position shown here

Diamond Expansion Traps

Sizes.....		1/2	3/4
Each.....		3.50	4.00
Plug and Screw.....		.80	1.00
Cap.....		.75	.90

Geipel Expansion Trap

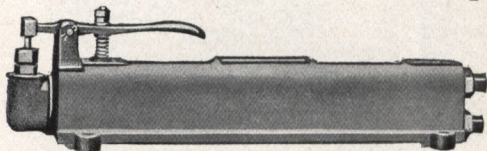


Fig. 2711. Geipel Expansion Trap

The following table shows the capacities of the traps, which of course vary according to radiating conditions, the maximum capacities of each size trap being based on what the traps will drain when used on an ordinary steam heating apparatus, under ordinary exposure to cooling. For an indirect steam heating apparatus the size of the trap should be at least 50 per cent. larger than the maximum capacity given in the table, and for special service, such as separators, slashers, sizing machines, etc., the number of feet given in the table cannot be taken as an index of the size to be used.

Number.....	These Sizes are for Pressures of 125 Pounds or Less		These Sizes are for Pressures of 200 Pounds or Less				
	0	1	2	3	4	5	
Capacity in Lineal Feet of 1-inch Pipe According to Radiating Conditions.....	225 to 900	450 to 2700	900 to 5850	1800 to 6750	2250 to 10800	4500 to 16200	
Size of Inlet and Outlet, inches.....	3/8	1/2	1/2	3/4	1	1 1/2	
Extreme Length, inches.....	13	18 1/4	22 1/2	27 1/8	30 3/8	34 3/4	
Extreme Height, inches.....	5 1/2	6 1/2	6 1/2	7 1/4	7 3/4	10 3/8	
Extreme Width, inches.....	3 1/8	4 1/4	4 1/4	5	5 5/8	7 1/4	
Weight, Pounds.....	7	14	19	28	39	61	
Each.....	9.50	15.00	20.00	36.00	44.00	66.00	

State steam pressure when ordering.

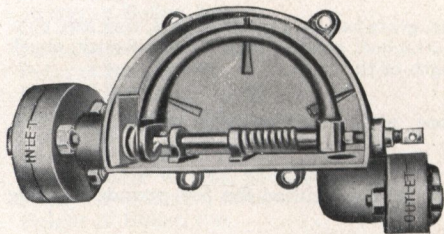


Fig. 2712. Heintz Steam Trap

Improved (Heintz) Steam Trap

Improved (Heintz) Steam Trap consists of a crescent-shaped spring tempered steel tube, which contains a fluid and is hermetically sealed. A change in temperature of one degree makes the tube open or close the valve. The amount of condensation governs the distance the tube moves the valve from seat.

Number.....	12	13	14	15	16	17	18	19	20
Valve Size, inches.....	1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	2
Size Pipe Connection, inches.....	1/2	1/2	3/4	3/4	1	1 1/4	1 1/2	1 1/2-2	2-2 1/2
Capacity, 1-inch Pipe, feet.....	500	1000	3000	5000	7000	12000	20000	40000	70000
Iron, each.....	8.00	11.00	17.00	25.00	32.00	40.00	55.00	70.00	90.00

Brass Traps quoted on application.

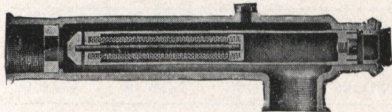


Fig. 2713. Sarco Steam Trap

Works with a pulsating action and continuously, therefore requiring no large storage capacity. It consists of a steam pipe body, which can be screwed on anywhere in a steam main or pipe, occupying very little space and taking the place of an elbow or bend. The trap can be adjusted instantly and when adjusted no live steam will be emitted

Sarco Steam Traps—Low Pressure, 0 to 50 Pounds

Size.....	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Each.....	6.00	6.00	9.45	11.25	24.15	30.00	38.70	51.75	60.00

Sarco Steam Traps—High Pressure, 50 to 200 Pounds

Size.....	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Each.....	7.75	7.75	10.35	12.00	28.50	34.50	48.30	60.00	75.00

Sizes 1 1/4 inch and larger, with flanged connections and companion flanges.

Return Tubular Boilers
With Half-Arch and Full-Arch Front Setting

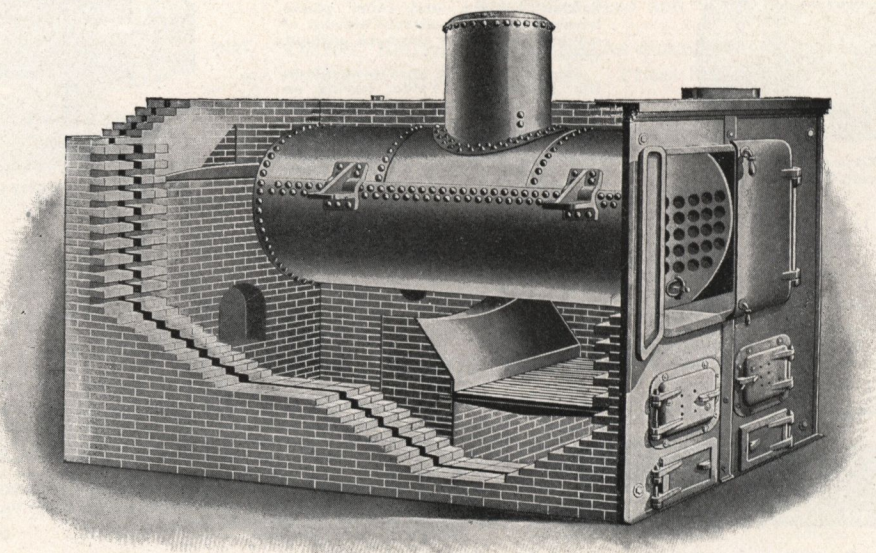


Fig. 2720. Return Tubular Boiler with Full-Arch Front Setting

Full-Arch Front Setting

Fittings and fixtures comprise: Front with doors and liners, grates, grate bearer, rear arch bars, rear ash door and frame, oval stack plate, binder bars and rods, safety valve, steam gauge, water gauge, water column attached, gauge cocks, blow-off cock, check valve, stop cock, whistle and pipe, smoke stack and gey rods four times the length of the stack.

Half-Arch Front Setting

Fittings and fixtures comprise: Britchen, front with doors and liners, grates, grate bearer, rear arch bars, rear ash door and frame, boiler stand, safety valve, steam gauge, water gauge, water column attached, gauge cocks, blow-off cock, check valve, stop cock, whistle and pipe, smoke stack and gey rods four times the length of the stack.

Injector will be furnished, when ordered, at an extra cost.
Boilers are regularly furnished with plain grates, but Tupper or Herringbone, or Sawdust patterns will be furnished, when preferred, without extra cost.
Regularly furnished with Steel Tubes. Charcoal Tubes at extra cost.
Tested and made thoroughly tight under 150 pounds hydrostatic pressure and are suited for 100 pounds working pressure.

Specifications

Number.....	18	19	20	22	24	25	26
Horse-power.....	10	12	15	20	25	30	35
Diameter Shell, inches.....	30	30	36	36	36	42	44
Length Tubes, feet.....	7	8	8	10	12	10	12
Diameter Tubes, inches.....	3	3	3	3	3	3	3½
Number of Tubes.....	20	20	22	24	26	40	28
Diameter Stack, inches.....	14	14	16	16	16	20	20
Length Stack, feet.....	24	24	24	28	30	30	30
Weight with Half-Arch Fixtures, pounds.....	3000	3150	3800	4400	5100	5750	6600
Weight with Full-Arch Fixtures, pounds.....	4000	4150	5100	5750	6450	7075	7900
Price of Bare Boiler, Half-Arch.....	326.00	364.00	441.00	557.00	683.00	767.00	872.00
Complete with Steel Tubes, Half-Arch.....	436.00	574.00	683.00	809.00	956.00	1061.00	1187.00
Complete with Steel Tubes, Full-Arch.....	609.00	651.00	798.00	903.00	1050.00	1208.00	1323.00
Number.....			27	28	29	30	31
Horse-power.....			40	45	50	60	70
Diameter Shell, inches.....			44	48	48	54	54
Length Tubes, feet.....			14	12	14	14	16
Diameter Tubes, inches.....			3½	3½	3½	3½	3½
Number of Tubes.....			28	32	32	44	44
Diameter Stack, inches.....			20	22	22	26	26
Length Stack, feet.....			35	40	40	40	45
Weight with Half-Arch Fixtures, pounds.....			7400	8700	9300	11750	12800
Weight with Full-Arch Fixtures, pounds.....			8700	10350	10950	13500	14600
Price of Bare Boiler, Half-Arch.....			977.00	1134.00	1298.00	1607.00	1806.00
Complete with Steel Tubes, Half-Arch.....			1334.00	1554.00	1722.00	2132.00	2331.00
Complete with Steel Tubes, Full-Arch.....			1449.00	1670.00	1827.00	2268.00	2478.00

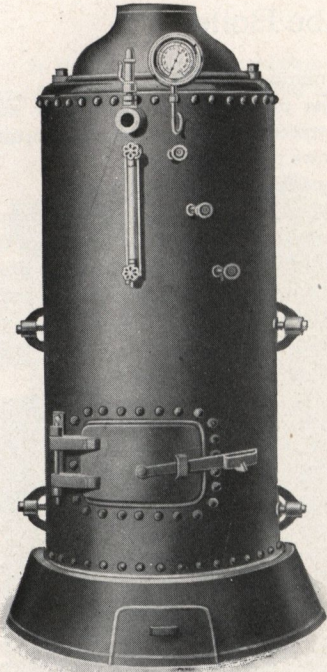


Fig. 2730. Vertical Boiler

Full-Length Tube Vertical Boilers

Fig. 2730 illustrates our Full Length Tube Vertical Boiler, with round base without bottom. This boiler can also be furnished with round base with iron bottom, and also with octagon base. The prices are the same for the round and octagon base, but an extra charge is made for round base with iron bottom. Orders should specify the style base preferred.

In the round base the wrought iron bottom is securely fastened, and has an air space between the bottom of the base and the boiler. By this means the use of brick may be obviated when using the boiler on a wooden floor, with perfect safety.

This group of boilers is made of open hearth, homogeneous flange steel plates, having a tensile strength of 55,000 pounds per square inch of section. All sizes above 20-inch are well braced by means of stay bolts, and all boilers 30-inch and upward in diameter have the vertical seams double riveted. From 1½ to 25-horsepower, inclusive, shells are made of a single sheet. The heads are drilled.

All boilers are tested and made thoroughly tight under a hydrostatic pressure of 150 pounds, and will pass for 100 pounds working pressure in districts where a special boiler ordinance is not in effect. We can also furnish them in accordance with the various local boiler ordinances in effect, and certificate of test and inspection is furnished when desired.

This type of boiler is especially recommended where space is limited. Being easily handled and a quick steamer, it enjoys wide popularity with contractors for hoisting and pumping, and is also extensively used in creameries, laundries and small manufacturing plants.

The fixtures comprise base, grate, hood, steam gauge, water gauge, gauge cocks, pop safety valve, blow-off valve, check and stop cock. Injectors and stacks will be furnished when ordered at an extra price.

	1½	2	3	4	5	6	8	10
Horse-power	91.00	104.00	118.00	171.00	197.00	221.00	265.00	297.00
Price of Bare Boiler	125.00	138.00	152.00	224.00	249.00	274.00	333.00	365.00
Price of Boiler Complete	16	19	19	24	24	24	48	48
Number 2-inch Tubes	18	24	30	25	37	49	34	46
Length of Tubes, inches	8	8	8	8	8	8	12	12
Diameter of Stack, inches	580	650	700	1070	1170	1250	1685	1895
Approximate Weight, pounds	20	20	20	24	24	24	30	30
Diameter of Boiler, inches	3	3½	4	4	5	6	5	6
Height of Boiler, feet	12	14	15	16	18	20	22	25
Horse-power	330.00	370.00	381.00	420.00	434.00	483.00	618.00	657.00
Price of Bare Boiler	398.00	465.00	476.00	515.00	527.00	578.00	743.60	782.60
Price of Boiler Complete	48	66	72	66	72	72	92	92
Number 2-inch Tubes	58	46	46	58	58	68	56	61
Length of Tubes, inches	12	15	15	15	15	15	18	18
Diameter of Stack, inches	2100	2475	2575	2775	2900	3125	3750	3900
Approximate Weight, pounds	30	36	36	36	36	36	42	42
Diameter of Boiler, inches	7	6	6	7	7	8	7	7½
Height of Boiler, feet	27	30	35	40	45	50	60	80
Horse-power	696.00	732.00	794.30	968.50	1026.00	1121.90	1388.00	1557.00
Price of Bare Boiler	822.00	858.00	921.00	1137.00	1193.40	1289.60	1612.00	1781.00
Price of Boiler Complete	92	92	92	130	130	130	172	172
Number 2-inch Tubes	68	74	85	74	80	90	80	90
Length of Tubes, inches	18	18	18	20	20	20	24	24
Diameter of Stack, inches	4125	4300	4600	5375	5550	5875	7500	8100
Approximate Weight, pounds	42	42	42	48	48	48	54	54
Diameter of Boiler, inches	8	8½	9½	8½	9	10	9	10
Height of Boiler, feet								

Prices are for boilers with steel tubes. Quoted specially with iron tubes.

Smoke Stacks and Guys

For Elbow in Stack Add Cost for 8 Feet of Stack

	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
Diameter Stack, inches	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
No. 16 Iron, per foot ..	1.40	1.70	2.00	2.30	2.70	3.00	3.10	3.70	4.00	4.30	4.60	5.00	5.30	5.70	6.00
No. 14 Iron, per foot ..	1.70	2.10	2.50	2.90	3.30	3.80	4.20	4.60	5.00	5.40	5.80	6.30	6.70	7.10	7.50
No. 12 Iron, per foot ..	2.00	2.40	2.80	3.20	3.60	4.00	4.40	4.80	5.20	5.60	6.00	6.40	6.80	7.20	7.60
No. 10 Iron, per foot ..	2.30	2.70	3.10	3.50	3.90	4.30	4.70	5.10	5.50	5.90	6.30	6.70	7.10	7.50	7.90
Guy Rope, per foot ..	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06
Damper in Stack, each ..	6.30	7.00	7.60	7.60	7.60	10.10	10.10	10.10	10.10	10.10	10.10	15.20	15.20	15.20	15.20
Umbrella Top, each ..	6.30	7.00	7.60	7.60	7.60	10.10	10.10	10.10	10.10	10.10	10.10	15.20	15.20	15.20	15.20

Automatic Safety Gas-Fired Water Tube Boiler

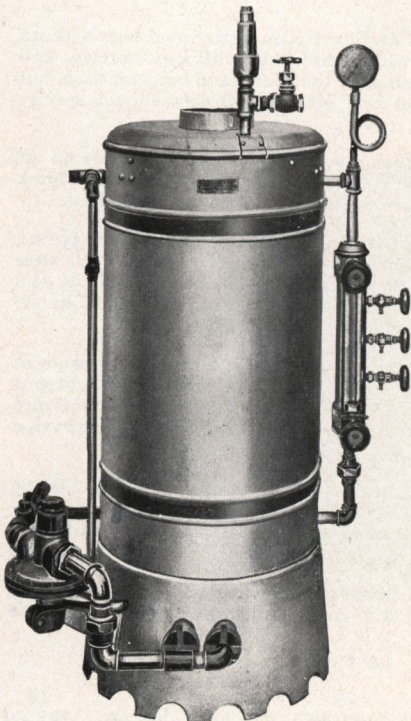


Fig. 2740. Gas-Fired Water Tube Boiler

This boiler will generate steam in four minutes after fire is started. Consumes approximately 60 feet of gas per horse-power per hour with an 89 per cent. efficiency. Boilers are tested to 500 pounds hydrostatic pressure and are safe for any working pressure up to 350 pounds. Special trimmings can be furnished for high pressures. Water should be fed to boiler by gravity, city water or power-driven pump. The heating surface in this boiler is very effective for the reason that the coils are so interlocked that the currents of heat passing eight or more times across and between them are brought immediately in contact with all parts of the heating surface, thus absorbing practically all the heat units in the fire.

The rapid circulation prevents the coils from clogging and assists in making the boiler a quick steamer, and also making it possible to use the boiler in connection with a condenser.

The water being divided into small streams, passes directly through the hottest part of the fire, thus making it possible to raise steam in four minutes. Although no large reserve of steam is carried, a sudden demand for steam is quickly supplied by the rapid steaming qualities of the boiler.

The boiler consists of a central stand-pipe 5 inches or more in diameter, with 1/2 inch bottom welded in. Stand-pipe is covered with a steel cap, from which extend 3 arms to the boiler cover holding the boiler proper in the cover. Cap is threaded and securely fitted to stand-pipe. The function of the stand-



Fig. 2741. Coil Construction

pipe is to hold a reserve of water in the bottom, distribute water to the coils, and hold a reserve of steam at the top. The reserve water in the stand-pipe and coils varies from 3 gallons in the smallest size to 8 gallons in the larger boilers. Boiler has no steam drum, hence all danger of explosion is obviated.

Coils are special grade of iron pipe, 1/8 inch being used in small size boilers, 1/8 and 1/4 or 1/4 and 3/8 combined in the larger sizes. They are coiled to a pitch of 1 1/4 inches, giving rapid circulation and rendering clogging impossible. Coils are attached to stand-pipe at top and bottom with right and left extension pieces. Although they appear to be intercoiled, such is not the case, being simply interlocked, and by removing an extension piece at top and bottom, each coil is readily detached.

Boiler cover is made of a heavy grade of galvanized iron, lined with mill-board asbestos to prevent radiation. Cover can be easily removed for inspection.

In operation, water is fed through a 1/2 inch or larger connection into bottom of central stand-pipe and is drawn into the coils by the rapid circulation through them, where it is turned into steam and passes to the top of the stand-pipe, taking with it a certain amount of water. As the steam and water pour from the top of the coils into the stand-pipe, the steam is completely separated from the water by an ingenious system of baffle plates, which prevent the boiler from priming. The steam is taken from the center of the top of the boiler and passed down through a pipe inside the cover to a superheater lying directly in the fire, where it is thoroughly dried, making it as expansive as possible. Upon leaving the superheater the steam passes inside the cover to the top of the boiler.

Prices include Throttle, Water Column and Gauge, Steam Gauge, Gauge Cocks, Stop Check, Blow-off and Safety Valve, and Automatic Gas Regulator.

Automatic Safety Gas-fired Water Tube Boiler

Horse-power....."	1	2	3	4	5	6	7	10
Diameter Boiler, inches.....	12	14½	17	18¼	19½	22	23½	30
Height of Boiler, inches.....	40	43	43	45	48	50	54	56
Weight of Boiler, pounds.....	200	275	375	475	550	650	800	1050
Floor Space, inches.....	16 x 16	18 x 18	19 x 19	22 x 22	24 x 24	26 x 26	28 x 28	34 x 34
Each.....	217.50	272.00	326.40	380.76	435.24	489.60	544.00	707.20

Note: These boilers can be equipped with kerosene burners for use where gas is not available.

Cast Iron Blow-Off Tanks

In the Standard Construction these Tanks are fitted with Combination 4-inch Inlet and Outlet for Soil Pipe, or Screwed Pipe Connections, also with Seal on Outlet and Manhole in Cover, as indicated in Sectional View.

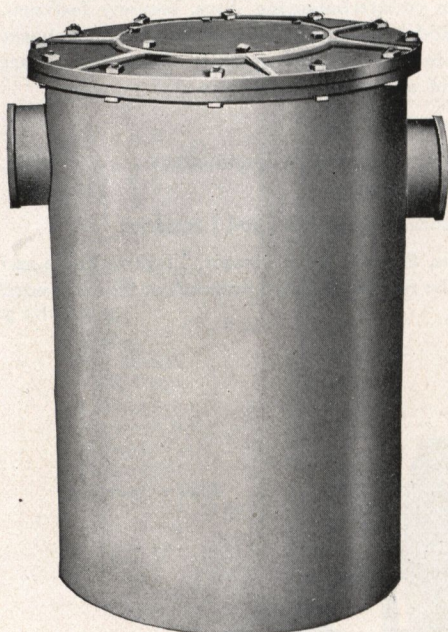


Fig. 2750
Full View Cast Iron Blow-off Tank

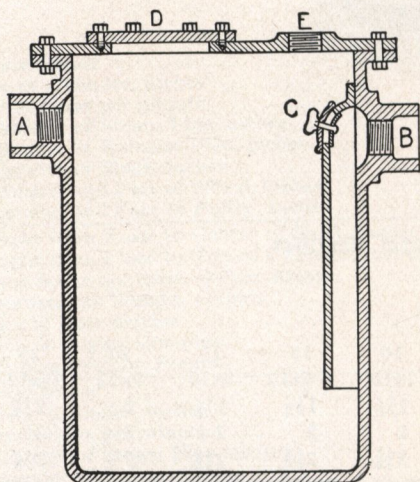


Fig. 2750
Sectional View Showing Inside Arrangement
of Standard Tanks

Description

A—Inlet. B—Outlet. C—Cleanout
D—Manhole. E—Vapor Vent

16-inch Diameter Blow-off Tanks

Diameter, inches.....	16	16	16
Depth, inches.....	16	20	24
Size Vent, inches.....	2	2	2
Approximate Weight, pounds.....	190	220	250
Each.....	18.00	19.00	21.00

18-inch Diameter Blow-off Tanks

Diameter, inches.....	18	18	18
Depth, inches.....	18	24	30
Size Vent, inches.....	2	2	2
Approximate Weight, pounds.....	225	275	325
Each.....	19.50	22.50	25.50

20-inch Diameter Blow-off Tanks

Diameter, inches.....	20	20	20
Depth, inches.....	24	30	36
Size Vent, inches.....	2	2	2
Approximate Weight, pounds.....	320	380	425
Each.....	25.00	29.00	33.00

24-inch Diameter Blow-off Tanks

Diameter, inches.....	24	24	24	24	24	24
Depth, inches.....	30	36	42	48	54	60
Size Vent, inches.....	2	2	2	2	2	2
Approximate Weight, lbs..	475	550	600	650	700	750
Each.....	39.00	43.00	47.00	51.00	55.00	60.00

26-inch Diameter Blow-off Tanks

Diameter, inches.....	26	26	26	26	26
Depth, inches.....	30	36	42	48	54
Size Vent, inches.....	2	2	2	2	2
Approximate Weight, pounds.....	575	650	700	775	850
Each.....	44.00	49.00	55.00	60.00	66.00

30-inch Diameter Blow-off Tanks

Diameter, inches.....	30	30	30	30	30	30
Depth, inches.....	30	36	42	48	54	60
Size Vent, inches.....	2	2	2	2	2	2
Approximate Weight, lbs..	600	650	700	750	850	1075
Each.....	48.00	52.00	58.00	62.00	67.00	72.00

36-inch Diameter Blow-off Tanks

Diameter, inches.....	36	36	36	36	36
Depth, inches.....	36	42	48	54	60
Size Vent, inches.....	3	3	3	3	3
Approximate Weight, pounds.....	900	1000	1100	1200	1400
Each.....	63.00	70.00	77.00	84.00	91.00

42-inch Diameter Blow-off Tanks

Diameter, inches.....	42	42	42	42	42
Depth, inches.....	42	48	54	60	60
Size Vent, inches.....	3	3	3	3	3
Approximate Weight, pounds.....	1100	1200	1300	1400	1400
Each.....	84.00	91.00	98.00	105.00	105.00

48-inch Diameter Blow-off Tanks

Diameter, inches.....	48	48	48	48	48
Depth, inches.....	48	54	60	66	72
Size Vent, inches.....	4	4	4	4	4
Approximate Weight, pounds.....	1700	1850	2000	2200	2500
Each.....	102.00	110.00	119.00	128.00	138.00

Basins 60 x 60 inches and 60 x 72 inches quoted on application.

Note: These tanks are also widely used for Gravel and Drainage Catch Basins, etc.

Horizontal Engines

With Sub-Base

These Engines are of the self-contained center-crank type, and are well made throughout. The Crankshaft is cut from a solid forging of the best quality of steel, and is equipped with cast-iron counterbalancing discs, securely fastened. The Piston is provided with self-adjusting packing rings. The Connecting Rod is equipped with phosphor-bronze boxes at each end. The cross-head end is the solid-end type, while the crank-pin end is of the strap type. Both brasses are adjusted by means of adjusting wedges. All parts are of easy access in case of adjustment or repairs.

The Fly-wheel and Pulley are turned crown-face, making it possible to belt from either.

A critical steam test of each Engine is made before it leaves factory, and the necessary adjustments carefully made, so that the Engine is ready to run the moment it is placed in position and given steam.

This Engine is giving very satisfactory results in operating Canning Factories, Creameries and Laundries.

The fittings and fixtures comprise: Fly-wheel, Pulley, Sub-Base, Oil Cups, Sight-feed Lubricator, Throttle Valve and Nipples, Governor and Governor Belt. Foundation Bolts and Washers will be furnished, when ordered, at an extra cost.

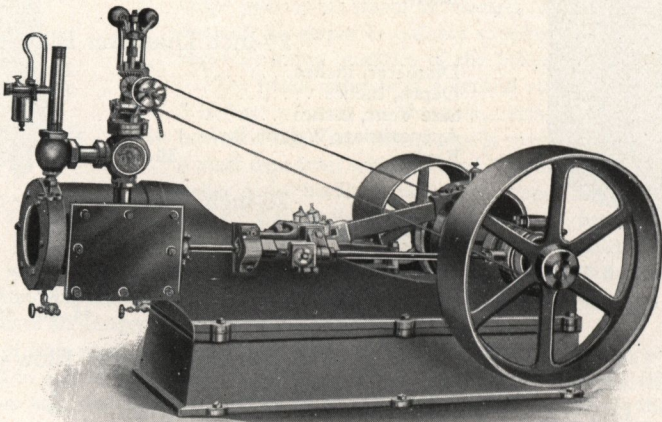


Fig. 2760. Horizontal Engine

Specifications and Price List for Horizontal Engines

With Sub-Base

Horse-power	6	8	9	10	12	15	20	25
Size of Cylinder, inches.....	5x7½	6x7½	6½x7½	7x10	7½x10	8x10	9x12	10x12
Diameter of Steam Pipe, inches.....	1	1¼	1¼	1½	1½	1½	2	2½
Diameter of Exhaust Pipe, inches.....	1¼	1½	1½	2	2	2	2½	3
Diameter of Shaft, inches.....	2⅜	2⅜	2⅜	2⅞	2⅞	2⅞	3¼	3¼
Diameter and Face of Wheel, inches.....	24x6	24x6	28x7	30x6¾	30x6¾	36x7¼	44x10	44x10
Diameter and Face of Pulley, inches.....	14x6⅝	14x6⅝	14x6⅝	16x7½	18x7½	18x7½	20x10	24x12
Revolutions per minute.....	250	225	225	200	180	180	160	160
Floor Space Required for Base, inches.....	19½x50	19½x50	19½x50	21x59½	21x59½	21x59½	28x65	28x65
Approximate Shipping Weight, pounds.....	1000	1075	1150	1650	1700	1750	2650	2750
Price of Bare Engine, less Sub-Base	194.00	210.00	221.00	269.00	299.00	313.00	441.00	462.00
Price Complete	269.00	294.00	309.00	387.00	420.00	441.00	641.00	672.00
Crating for Export.....	7.50	7.50	8.00	9.50	9.50	10.00	12.75	15.75

Vertical Engines

In the design of these Vertical Engines the arrangement is such that the construction is reduced to the simplest possible form. The engine is noticeably well made throughout, rods being made of steel, crank shaft of solid hammered steel, brasses of phosphor bronze and the bearings of Babbitt Metal.

For all conditions where an efficient and reliable engine is required this engine is recommended.

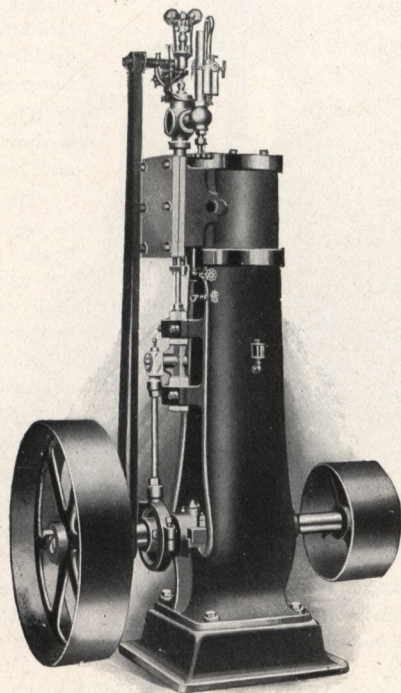


Fig. 2770. Vertical Engine

Note: List Prices for "Bare Engine" do not include the following trimmings:

Pulley
Fly-Wheel
4 Oil Cups
Lubricator
Throttle Valve
Nipples
Governor
Governor Belt

"Price of Engine Complete" includes all the trimmings listed opposite, of proper size for the engine ordered

Specifications and Price List

	1	1½	2	3	4	5	6	7
Horse-Power	2½	3	3x5	4x4	4x5	5x5	5x7½	6x6
Size of Cylinder, inches	2½x3	3x3	3x5	4x4	4x5	5x5	5x7½	6x6
Revolutions per minute	400	400	350	325	325	300	250	225
Diameter of Steam Pipe, inches	¾	1½	1½	¾	¾	¾	1	1
Diameter of Exhaust Pipe, inches	1½	¾	¾	1	1	1	1¼	1¼
Diameter of Shaft, inches	1½	1½	1½	1½	1½	1½	2½	2½
Diameter and Face of Wheel, inches	12x3	12x3	15x4	16x4	17x4½	20x5	24x6	24x6
Diameter and Face of Pulley, inches	6x3	6x3	10x5	10x5	12x6	12x6	14x6½	14x6½
Height from Floor to Center of Shaft, inches	7	9	10	9½	10	10	13	14
Height from Floor to Top of Cylinder, inches	28	31	43	36½	43	43	54	54
Floor Space occupied, inches square	13	13	17	13½	17	17	20	20
Approximate Weight, pounds	200	200	375	400	425	500	750	825
Price of Bare Engine	79.00	97.00	120.00	125.00	130.00	135.00	162.00	173.00
Price of Engine Complete	115.00	133.00	161.00	169.00	176.00	185.00	221.00	232.00
Shipping Weight, Pounds	300	300	485	510	550	635	1000	1075
Horse-power	8	9	10	12	15	20	25	
Size of Cylinder, inches	6x7½	6½x7½	7x7	7x8½	8x8½	9x9	10x10	
Revolutions per minute	225	225	200	200	200	160	160	
Diameter of Steam Pipe, inches	1¼	1¼	1¼	1¼	1½	2	2½	
Diameter of Exhaust Pipe, inches	1½	1½	1½	1½	2	2½	3	
Diameter of Shaft, inches	2½	2½	2½	2½	2½	2½	3¼	
Diameter and Face of Wheel, inches	24x6	28x7	30x6¾	30x6¾	36x7¼	40x9	44x10½	
Diameter and Face of Pulley, inches	14x6½	14x6½	16x7½	16x7½	18x8	20x10	24x12	
Height from Floor to Center of Shaft, inches	13½	15	17¼	17¼	19¼	23½	24½	
Height from Floor to Top of Cylinder, inches	54	55½	63	67	69	79	86	
Floor Space occupied, inches square	20	20	24	24	24	30	36	
Approximate Weight, pounds	850	925	1200	1450	1500	2225	3050	
Price of Bare Engine	179.00	190.00	237.00	281.00	282.00	409.50	652.00	
Price of Engine Complete	244.00	258.00	308.00	352.00	369.00	549.00	822.00	
Shipping Weight, Pounds	1100	1165	1500	1700	1800	2715	3700	

Horizontal Engine

For Distillate, Gasoline or Kerosene

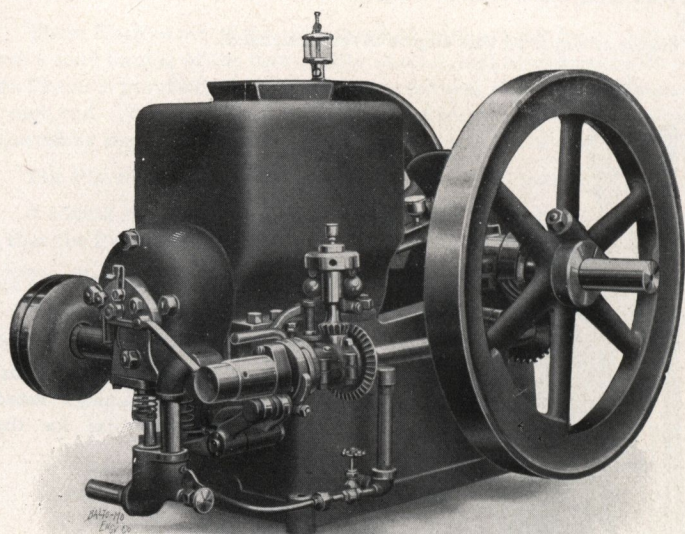


Fig. 2780. Horizontal Gasoline Engine

Pulley, Muffler, Wrenches, Oilers, Oil-Can and a Sample Can of Gas Engine Oil are included with fixtures. Pulleys for the 4 and 6 horse-power engines are plain; for the larger sizes they are of the friction-clutch type, although friction pulleys can be furnished with the 4 and 6 horse-powers at an extra cost. These sizes will be furnished with plain pulleys unless friction pulleys are specified in order.

Magneto is furnished with the 15-horse-power engines, but can be furnished on the smaller sizes at an extra cost, except when they are equipped with Atwater-Kent Ignition System. Magnetos cannot be used in connection with that system.

Floor space dimensions are length of crank shaft by length over all.

Gasolene Engines will always be shipped unless otherwise ordered.

Horizontal Engine for Distillate, Gasoline or Kerosene

Horse-power.....	4	6	8	10	12	15
Size of Cylinder, inches.....	5½ x 7½	6¼ x 7½	6¾ x 9	7¼ x 10	8 x 10	8¾ x 14
Revolutions per Minute.....	350	340	325	300	300	250
Diameter of Shaft, inches.....	2⅜	2⅜	2⅝	2⅞	2⅞	3¼
Diameter and Face of Wheel, inches.....	28 x 2¾	36 x 2¾	38 x 3½	40 x 3½	42 x 4	50 x 4
Diameter and Face of Pulley, inches.....	14 x 5	18 x 6	24 x 8	26 x 8½	28 x 9	34 x 12
Capacity of Fuel Tank, gallons.....	5	6	9¾	10	10¾	15
Capacity of Hopper Cooling Tank, gallons.....	6	7	9	18	20	40
Floor Space Required, inches.....	42 x 50	42 x 59	48 x 63	52 x 70	52 x 71	63 x 84
Approximate Shipping Weight, pounds.....	1100	1325	2000	2675	2950	3800
Approximate Shipping Weight, Crated for Export, lbs.....	1300	1600	2300	3050	3400	4500
Approximate Cubic Feet, Crated for Export.....	39	54	70	93	100	204
Price Complete with Plain Pulley.....	362.00	410.00	.....	.....	.....	.....
Price Complete with Friction Pulley.....	383.00	431.00	578.00	756.00	809.00	*1029.00
Extra for Gear Driven Magneto.....	34.00	38.00	50.50	55.00	55.00	.....
Extra for Kerosene Attachment.....	36.00	38.00	42.00	46.50	46.50	59.00
Extra for Foundation Bolts and Washers.....	9.50	10.50	13.00	15.00	15.00	21.00

*This price includes Gear Driven Magneto

Mounted on Horse Truck

Horse-power.....	4	6	8	10	12	15
Price Complete with Plain Pulley.....	452.00	525.00	.....	.....	.....	.....
Price Complete with Friction Pulley.....	473.00	546.00	714.00	914.00	966.00	*1208.00
Extra for Gear Driven Magneto.....	34.00	38.00	50.50	55.00	55.00	.....
Extra for Kerosene Attachment.....	46.50	48.50	52.50	59.00	59.00	71.50

*This price includes Gear Driven Magneto.

4-horse-power Engine, mounted on Hand Truck, Complete with Plain Pulley..... 410.00

Vertical Engine

For Distillate, Gasoline and Kerosene

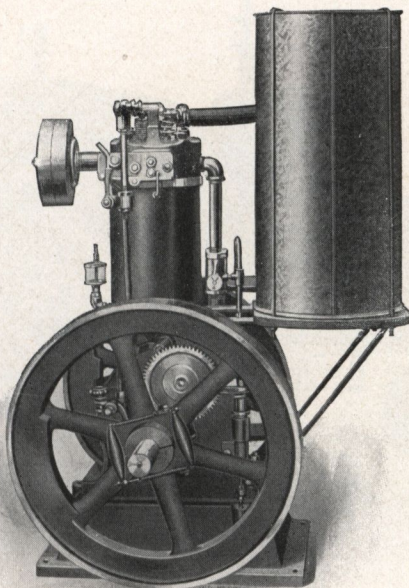


Fig. 2790. Gasoline Engine

These Engines are equipped with make-and-break igniters of simple and rigid construction, provision being made for easy adjusting and timing.

Engines run clock-wise, but they can be furnished to run in the opposite direction when so ordered, without extra charge. This is often desirable for driving special machinery.

The Speed Regulator is strong and accurate, giving a speed variation of 25 per cent.

Cooling Tank can be placed on either side.

The Base is cast solid, forming the Fuel Tank.

Floor space dimensions are length of crankshaft by length of skids.

Pulley, Muffler, Cooling Tank, Batteries, Wrenches, Oiler, Oil Can and a sample can of Gas Engine Oil are included with fixtures.

Pulleys for 4 and 6 horse-power are plain; for larger sizes they are of the Friction Clutch type, although the Friction Clutch type can be furnished with the 4 and 6 horse-powers at an extra cost.

Magneto can be furnished at an extra cost.

Gasoline Engines will always be shipped unless otherwise ordered.

Distillate, Gasoline and Kerosene Engines—Vertical

	4	6	8	10	12
Horse-power	4	6	8	10	12
Size of Cylinder, inches	5½ x 7½	6¼ x 7½	6¾ x 9	7¼ x 10	8 x 10
Revolutions per Minute	350	340	325	300	300
Diameter of Shaft, inches	2⅜	2⅜	2⅝	2⅞	2⅞
Diameter and Face of Wheels, inches	28 x 2¾	30 x 3	38 x 3½	40 x 3½	42 x 4
Diameter and Face of Pulley, inches	14 x 5	18 x 6	24 x 8	26 x 8½	28 x 9
Capacity of Fuel Tank, gallons	5	5	10	20	20
Capacity of Cooling Tank, gallons	18	18	26	32	37
Floor Space, inches	41 x 38	41 x 38	47 x 45	52 x 48	52 x 52
Approximate Shipping Weight, pounds	1150	1300	2000	2700	2950
Approximate Shipping Weight, Crated for Export, pounds	1400	1550	2375	3100	3400
Price Complete with Plain Pulley	305.00	347.00	.....	.....	.....
Complete with Friction Pulley	326.00	368.00	536.00	630.00	683.00
Extra for Gear-driven Magneto	34.00	38.00	50.50	55.00	55.00
Extra for Kerosene Attachment	29.50	31.50	36.00	42.00	42.00
Extra for Foundation Bolts and Washers	9.50	10.50	13.00	15.00	15.00
Price of Crating for Export	7.50	8.50	10.50	12.75	12.75

Junior Horizontal Engine

For Distillate, Gasoline or Kerosene

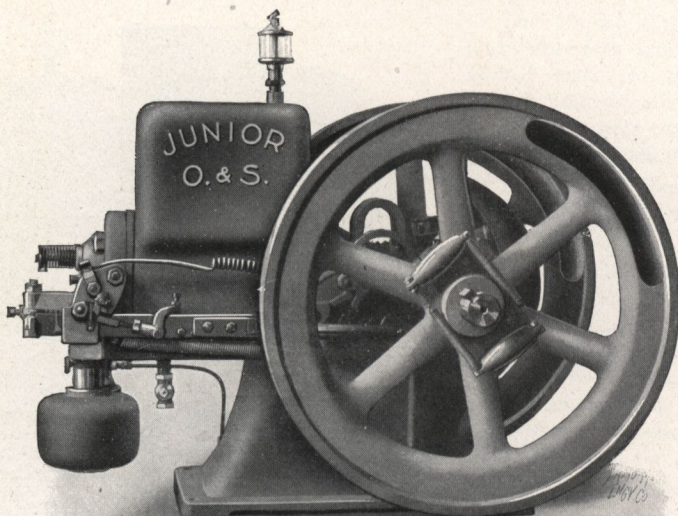


Fig. 2800. Junior Horizontal Gasoline Engine

The above illustration shows our Junior Horizontal Engine, of the Hopper Cooled type. Being substantial and reliable, it is especially adapted for operating Concrete Mixers and for general farm duties, such as Pumping, Sawing, Running Shredders, Separators, Churns, and Washing Machines.

The material and workmanship throughout are of the best, and being manufactured from jigs, all parts are interchangeable. Every Engine is carefully tested before shipment, to insure its developing the rated horse-power and successful operation.

It is equipped with make-and-break igniter, Sumter gear-driven magneto, governor of the fly-wheel centrifugal type, and with a steel push rod, having long and rigid bearings. This style of push rod reduces the possibility of lost motion to a minimum. The fuel tank is located in the base.

Pulley, Muffler, Wrench, Oilers, Oil Can, and a Sample Can of Gas Engine Oil are included with the fixtures. The pulley is plain.

The floor space dimensions are length of crankshaft by length over all.

Gasolene Engines will always be shipped unless otherwise ordered.

The Junior Horizontal Engine can be furnished mounted on hand truck at prices listed below.

Junior Horizontal Engine For Distillate, Gasoline and Kerosene

Specifications and Prices

Horse-power	2½	4
Size of Cylinder, inches	4½ x 5¼	5¼ x 5½
Revolutions per minute	400	375
Diameter of Shaft, inches	1½	1¾
Diameter and Face of Wheels, inches	20 x 2½	23 x 2¾
Diameter and Face of Pulley, inches	8 x 4	10 x 5
Capacity of Fuel Tank, gallons	3	4
Capacity of Hopper Cooling Tank, gallons	2	3
Floor Space Required, inches	33 x 28	38 x 28½
Approximate Shipping Weight, pounds	475	675
Approximate Shipping Weight, crated for export, pounds	600	775
Approximate Cubic Feet, crated for export	20	23
Price Engine complete	158.00	189.00
Extra for Kerosene Attachment	32.00	34.00
Foundation Bolts and Washers	4.50	5.50
Crating for Export	3.75	4.25
Junior Horizontal Engine, mounted on Hand Truck	187.00	219.00

Pickering Governors

Equipped with Wide Range Speed Changer



Fig. 2810. Class B

Represents Governor with Speed Ranger by use of which the speed of engine can be varied while in motion. Cord attached to Sawyer's Lever permits stopping engine from a distance.

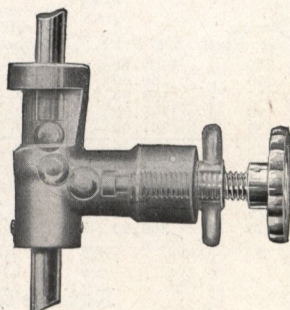


Fig. 2811

Cut shows simplicity of speed changing device furnished on Pickering Governors without additional cost.

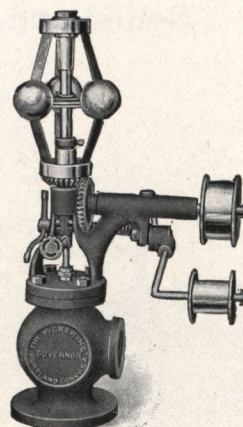


Fig. 2812. Class A

Same as Fig. 2810 with addition of Automatic Safety Stop. The Stop closes valve when belt breaks and is simple and certain in its action. When Governor is to be driven by a vertical belt, order should so specify.

Pickering Class B can be changed to Class A by ordering Stop Motion parts.

Plain Governors have balls, cap and edges of flanges turned but not polished.

Finished Governors are the same in all respects except parts are polished.

Size of Governor Diameter of Opening	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{4}$	$2\frac{1}{2}$
Class A, Plain, each	16.50	18.50	21.00	24.50	29.50	36.00	42.00	48.00
Class A, Finished, each	18.50	20.50	23.00	27.50	33.50	40.00	47.00	53.00
Class B, Plain, each	14.00	16.00	18.00	21.00	25.00	30.00	35.00	40.00
Class B, Finished, each	16.00	18.00	20.00	24.00	29.00	34.00	40.00	45.00
Diameter Base Flange	Sc'w or $3\frac{1}{2}$	Sc'w or $3\frac{1}{2}$	Sc'w or $4\frac{1}{2}$	Sc'w or 5	$5\frac{1}{4}$	$6\frac{1}{2}$	7	$7\frac{1}{2}$
Diameter Side Flange	Screw	Screw	Screw	Screw	Screw	Screw	6	Sc'w or $6\frac{1}{2}$
Speed of Governor	500	550	350	350	380	380	300	300
Diameter Pulley on Governor	2	2	$2\frac{1}{2}$	$2\frac{1}{2}$	$3\frac{1}{2}$	$3\frac{1}{2}$	4	4
Size of Governor Diameter of Opening		3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6	7
Class A, Plain, each		59.00	71.00	83.00	96.00	109.00	140.00	170.00
Class A, Finished, each		67.00	80.00	93.00	107.00	121.00	154.00	186.00
Class B, Plain, each		50.00	60.00	71.00	83.00	94.00	122.00	150.00
Class B, Finished, each		58.00	69.00	81.00	94.00	106.00	136.00	166.00
Diameter Base Flange		9	10	11	11	12	14	15
Diameter Side Flange		8	$8\frac{1}{2}$	$9\frac{1}{2}$	10	11	13	14
Speed of Governor		340	340	320	320	275	275	275
Diameter Pulley on Governor		4	4	5	5	5	6	7

Larger sizes and other patterns given in Governor catalogue mailed on request.

Pulleys supplied with all Governors and sent in accordance with list. Engine pulleys should be proportioned to give Governor correct speed that is shown in table above, or we will provide suitable pulley for Governor if given speed of engine and diameter of pulley on engine shaft from which Governor is driven.

Where unduly large Governor Pulleys are necessary, when figuring on Governor's speeds in the above table, we are prepared to furnish another style of Gears, which increase the shaft's speed and correspondingly reduce the Governor Pulley size.

Valve Chambers



Fig. 2813



Fig. 2814



Fig. 2815



Fig. 2816

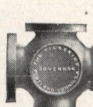


Fig. 2817



Fig. 2818

Chambers will be furnished in accordance with printed list unless otherwise ordered, but any form illustrated above can be supplied.

Round and Square Sectional Steam and Water Boilers

Ratings for Steam

Number of Boiler	Rating Square Feet	List Price	Diameter Grate Inches	Height of Water Line Inches	Size Smoke Pipe Inches	Tappings Each Flow and Return Inches	Height to Outlets Inches
11-16-S-2	250	\$132.00	16	37	7	2-2	43½
11-16-S-3	300	150.00	16	41½	7	2-2	48
11-19-S-2	325	158.00	19	39	7	2-2½	44¾
11-19-S-3	400	193.00	19	44	7	2-2½	49¾
11-19-S-4	450	207.00	19	49	7	2-2½	54¾
11-22-S-2	525	226.00	22	43	9	2-3	49¼
11-22-S-3	575	240.00	22	47¾	9	2-3	54
11-22-S-4	625	278.00	22	52½	9	2-3	58¾
11-25-S-3	750	317.00	25	53	9	2-3	59½
11-25-S-4	825	338.00	25	59	9	2-3	65½
11-25-S-5	900	360.00	25	65	9	2-3	71½

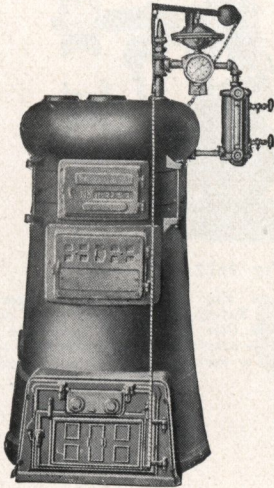


Fig. 2820
Round Sectional Boiler

Ratings for Water

Number of Boiler	Rating Square Feet	List Price	Diameter of Grate Inches	Size Smoke Pipe Inches	Tappings Each Flow and Return Inches	Height to Outlets Inches
11-16-W-2	400	\$114.00	16	7	2-2	43½
11-16-W-3	500	141.00	16	7	2-2	48
11-19-W-2	550	153.00	19	7	2-2½	44¾
11-19-W-3	650	184.00	19	7	2-2½	49¾
11-19-W-4	750	197.00	19	7	2-2½	54¾
11-22-W-2	875	218.00	22	9	2-3	49¼
11-22-W-3	950	230.00	22	9	2-3	54
11-22-W-4	1025	270.00	22	9	2-3	58¾
11-25-W-3	1250	306.00	25	9	2-3	59½
11-25-W-4	1375	328.00	25	9	2-3	65½
11-25-W-5	1500	350.00	25	9	2-3	71½

Square Sectional Boilers

Ratings for Steam

Number of Boiler	Rating Square Feet	List Price	Grate Dimensions Inches	Total Length Inches	Water Line Inches	Tappings Each for Flow and Return Inches	Smoke Pipe Inches
204	700	\$310.00	20 x 23	40½	44½	2-4	10
205	900	370.00	20 x 30	47½	44½	2-4	10
206	1100	430.00	20 x 37	54½	44½	2-4	10
207	1300	490.00	20 x 44	61½	44½	2-4	10
208	1500	550.00	20 x 51	68½	44½	2-4	10
305	1450	535.00	30 x 30	51½	49½	2-4	13
306	1800	640.00	30 x 37	58½	49½	2-4	13
307	2200	780.00	30 x 44	65½	49½	2-4	13
308	2550	830.00	30 x 51	72½	49½	3-4	13
309	2900	924.00	30 x 58	79½	49½	3-4	13
40-S-5	2900	925.00	40 x 34	54½	62½	2-5	17
40-S-6	3625	1070.00	40 x 42½	63	62½	2-5	17
40-S-7	4350	1215.00	40 x 51	71½	62½	2-5	17
40-S-8	5075	1360.00	40 x 59½	80	62½	3-5	17
40-S-9	5800	1505.00	40 x 68	88½	62½	3-5	17
40-S-10	6525	1650.00	40 x 76½	97	62½	4-5	17
40-S-11	7250	1795.00	40 x 85	104½	62½	4-5	17



Fig. 2821
Square Sectional Boiler

Ratings for Water

Number of Boiler	Rating Square Feet	List Price	Grate Dimensions Inches	Total Length Inches	Tappings Each Flow and Return Inches	Smoke Pipe Inches
204	1150	300.00	20 x 23	40½	2-4	10
205	1475	360.00	20 x 30	47½	2-4	10
206	1800	420.00	20 x 37	54½	2-4	10
207	2150	480.00	20 x 44	61½	2-4	10
208	2475	540.00	20 x 51	68½	2-4	10
305	2400	525.00	30 x 30	51½	2-4	13
306	3000	630.00	30 x 37	58½	2-4	13
307	3600	740.00	30 x 44	65½	2-4	13
308	4200	810.00	30 x 51	72½	3-4	13
309	4800	904.00	30 x 58	79½	3-4	13
40-W-5	4800	905.00	40 x 34	54½	2-5	17
40-W-6	6000	1050.00	40 x 42½	63	2-5	17
40-W-7	7200	1205.00	40 x 51	71½	2-5	17
40-W-8	8400	1340.00	40 x 59½	80	3-5	17
40-W-9	9600	1485.00	40 x 68	88½	3-5	17
40-W-10	10800	1630.00	40 x 76½	97	4-5	17
40-W-11	12000	1765.00	40 x 85	104½	4-5	17

Round and Square Sectional Steam and Water Boilers

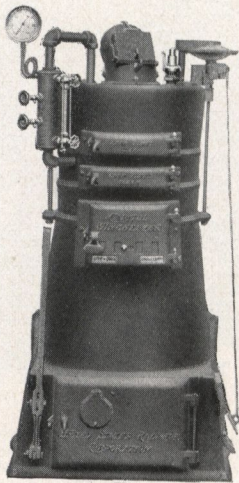


Fig. 2830
Round Sectional Boiler

Ratings for Steam

Number	8 Hour Rating Square Feet	List Price	Actual Grate Diam. Inches	Grate Area Square Feet	Height Water Line Inches	Height Outlets Inches	Outlets and Inlets Inches	Smoke Pipe Inches
3130	200	114.00	15	1.23	44 ¹ / ₁₆	49 ³ / ₁₆	2-2 ¹ / ₂	6
3140	225	123.00	15	1.23	48 ¹ / ₁₆	53 ³ / ₁₆	2-2 ¹ / ₂	6
3230	250	132.00	17	1.58	44 ³ / ₈	49 ¹ / ₂	2-2 ¹ / ₂	6
3240	300	149.50	17	1.58	49	54 ¹ / ₁₆	2-2 ¹ / ₂	6
3330	325	158.00	20	2.18	44 ¹ / ₁₆	49 ¹ / ₁₆	2-2 ¹ / ₂	7
3340	375	180.00	20	2.18	49	54 ³ / ₄	2-2 ¹ / ₂	7
3350	425	199.50	20	2.18	53 ¹ / ₁₆	59 ³ / ₁₆	2-2 ¹ / ₂	7
3440	500	219.50	24 ¹ / ₂	3.27	50 ³ / ₈	56 ¹ / ₁₆	2-3	8
3450	575	240.00	24 ¹ / ₂	3.27	55 ¹ / ₂	61	2-3	8
3460	650	287.50	24 ¹ / ₂	3.27	60 ³ / ₈	65 ¹ / ₁₆	2-3	8
3540	750	317.00	29	4.59	52 ¹ / ₁₆	57 ¹ / ₁₆	2-4	9
3550	850	346.00	29	4.59	56 ¹ / ₁₆	62 ³ / ₁₆	2-4	9
3560	950	375.00	29	4.59	61 ¹ / ₁₆	67 ¹ / ₁₆	2-4	9
3640	1100	420.00	33	5.94	53 ¹ / ₁₆	59 ¹ / ₁₆	2-4	10
3650	1225	455.00	33	5.94	58 ¹ / ₁₆	63 ¹ / ₁₆	2-4	10
3660	1350	492.00	33	5.94	63 ¹ / ₁₆	68 ¹ / ₁₆	2-4	10

Ratings for Water

Number	8 Hour Rating Square Feet	List Price	Actual Grate Diam. Inches	Grate Area Square Feet	Height Outlets Inches	Outlets and Inlets Inches	Smoke Pipe Inches
4130	325	96.50	15	1.23	43 ¹ / ₁₆	2-2 ¹ / ₂	6
4140	375	105.50	15	1.23	47 ¹ / ₁₆	2-2 ¹ / ₂	6
4230	425	123.00	17	1.58	44 ¹ / ₄	2-2 ¹ / ₂	6
4240	500	140.50	17	1.58	48 ¹ / ₁₆	2-2 ¹ / ₂	6
4330	550	153.50	20	2.18	44 ¹ / ₁₆	2-2 ¹ / ₂	7
4340	625	171.00	20	2.18	49 ¹ / ₁₆	2-2 ¹ / ₂	7
4350	700	191.00	20	2.18	54 ¹ / ₁₆	2-2 ¹ / ₂	7
4440	825	210.50	24 ¹ / ₂	3.27	50 ³ / ₈	2-3	8
4450	950	230.00	24 ¹ / ₂	3.27	55 ¹ / ₂	2-3	8
4460	1075	277.50	24 ¹ / ₂	3.27	60 ³ / ₈	2-3	8
4540	1225	303.00	29	4.59	52 ¹ / ₁₆	2-4	9
4550	1400	336.00	29	4.59	57 ¹ / ₁₆	2-4	9
4560	1575	365.00	29	4.59	62 ¹ / ₁₆	2-4	9
4640	1825	410.00	33	5.94	53 ¹ / ₁₆	2-4	10
4650	2025	442.00	33	5.94	58 ¹ / ₁₆	2-4	10
4660	2225	482.00	33	5.94	63 ¹ / ₁₆	2-4	10

Square Sectional Boilers

Ratings for Steam

Number	8 Hour Rating Square Feet	List Price	Height of Water Line Inches	Fire Pot Area Inches	Base Dimensions Inches	Outlets and Inlets Inches
184	400	208.00	40 ¹ / ₂	20 x 17 ¹ / ₂	25 ¹ / ₂ x 20 ¹ / ₄	2-3
185	550	245.00	40 ¹ / ₂	20 x 24	25 ¹ / ₂ x 26 ¹ / ₂	2-3
186	700	310.00	40 ¹ / ₂	20 x 30	25 ¹ / ₂ x 32 ³ / ₄	2-3
187	850	355.00	40 ¹ / ₂	20 x 36	25 ¹ / ₂ x 39	2-3
225	800	340.00	43 ¹ / ₂	27 x 23	30 x 27	2-3
226	1000	400.00	43 ¹ / ₂	27 x 29	30 x 33 ¹ / ₄	2-3
227	1200	460.00	43 ¹ / ₂	27 x 35	30 x 39 ¹ / ₂	2-3
228	1400	520.00	43 ¹ / ₂	27 x 42	30 x 45 ³ / ₄	3-3
G 276	1350	505.00	45 ¹ / ₂	32 x 31	36 x 36	2-4
G 277	1650	595.00	45 ¹ / ₂	32 x 38	36 x 42 ³ / ₄	2-4
G 278	1950	685.00	45 ¹ / ₂	32 x 45	36 x 49 ¹ / ₂	3-4
G 279	2250	775.00	45 ¹ / ₂	32 x 51	36 x 56 ¹ / ₄	3-4

Ratings for Water

Number	8-Hour Rating Square Feet	List Price	Height Water Line Inches	Fire-pot Area Inches	Base Dimensions Inches	Outlets and Inlets Inches
184	650	198.00	....	20 x 17 ¹ / ₂	25 ¹ / ₂ x 20 ¹ / ₄	2-3
185	910	235.00	....	20 x 24	25 ¹ / ₂ x 26 ¹ / ₂	2-3
186	1170	300.00	....	20 x 30	25 ¹ / ₂ x 32 ³ / ₄	2-3
187	1430	345.00	....	20 x 36	25 ¹ / ₂ x 39	2-3
225	1320	330.00	....	27 x 23	30 x 27	2-3
226	1650	390.00	....	27 x 29	30 x 33 ¹ / ₄	2-3
227	1980	450.00	....	27 x 35	30 x 39 ¹ / ₂	2-3
228	2310	510.00	....	27 x 42	30 x 45 ³ / ₄	3-3
G 276	2230	495.00	....	32 x 31	36 x 36	2-4
G 277	2720	585.00	....	32 x 38	36 x 42 ³ / ₄	2-4
G 278	3210	675.00	....	32 x 45	36 x 49 ¹ / ₂	3-4
G 279	3700	765.00	....	32 x 51	36 x 56 ¹ / ₄	3-4

Steam and water boilers of larger capacities quoted on application.

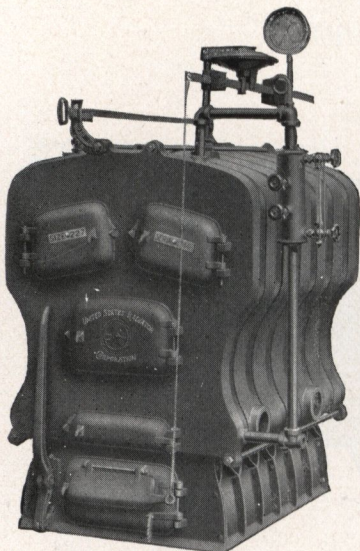


Fig. 2831
Square Sectional Boiler

Dimensions of Steam Boilers inclusive of trimmings:

Numbers	Height	Width
184-187	65 inches	36 ³ / ₄ inches
225-228	66 ¹ / ₂ inches	44 ¹ / ₂ inches
G 276-279	72 inches	50 ³ / ₄ inches

Tank Heaters

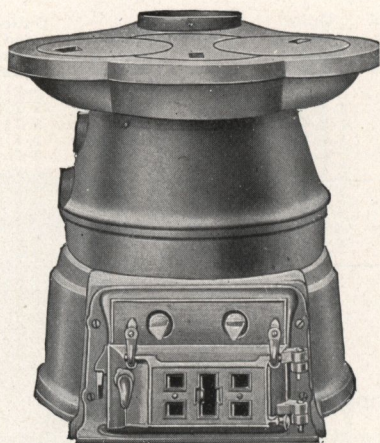


Fig. 2840. Laundry Tank Heater

No. Heater.....	201
Height of Heater, inches.....	22
Diameter Fire Pot, inches.....	12
Size Oval Top, inches.....	22 x 20
Covers, inches.....	2-8
Size Smoke Pipe, inches.....	5
Tapped, inches.....	1½
Tank Capacity, gallons.....	125
List Price.....	42.50



Fig. 2841. Dome Top Tank Heater

No. Heater.....	120	601
Height of Heater, inches.....	31½	34½
Diameter Fire Pot, inches.....	12	16
Size Smoke Pipe, inches.....	6	6
Tapped, inches.....	2	2
Tank Capacity, gallons.....	300	400
Square Feet Radiation.....	225	300
List Price.....	60.00	90.00

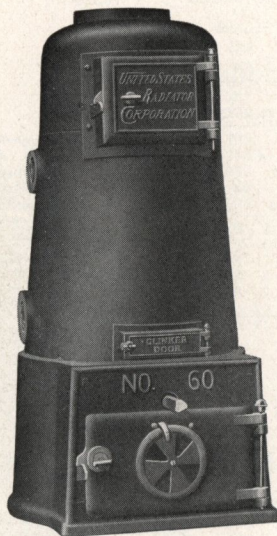


Fig. 2842. Tank Heater, No. 60 Series

No. Heater.....	62	63
Height, inches.....	36	39
Diameter Fire Pot, inches.....	13	13
Size Tappings, inches.....	2	2
Smoke Pipe, inches.....	6	6
Tank, Capacity, gallons.....	200	250
List Price.....	50.00	60.00

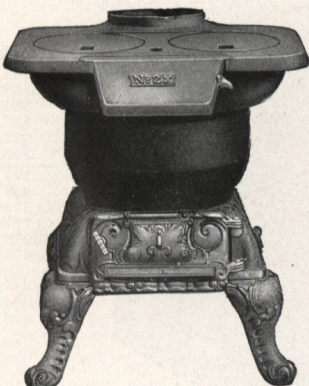


Fig. 2843. Tank Heater, Laundry Type

No. Heater.....	2x	119	120
Diameter Fire Pot.....	10	10	12
Size Tappings, inches.....	1	1	1½
Size Top for Irons, inches.....	14x21	14x24	15
Tank Capacity, gallons.....	60	90	150
List Price.....	23.00	30.00	40.00

No. 120 has round top and pouch feed door.

Cast Iron Steam and Water Radiators

Triton Plain One-Column Radiators
For Steam and Water

List Prices, Steam and Water

Height, inches.....	38	32	26	22	20
Per Square Foot.....	.35	.48	.42	.44	.48

Heating Surface

Number of Sections	*Length Inches	38 Inch Height 3 Square Feet Per Section	32 Inch Height 2 1/2 Square Feet Per Section	26 Inch Height 2 Square Feet Per Section	22 Inch Height 1 3/4 Square Feet Per Section	20 Inch Height 1 1/2 Square Feet Per Section
2	5	6	5	4	3 1/2	3
3	7 1/2	9	7 1/2	6	5	4 1/2
4	10	12	10	8	6 2/3	6
5	12 1/2	15	12 1/2	10	8 1/3	7 1/2
6	15	18	15	12	10	9
7	17 1/2	21	17 1/2	14	11 2/3	10 1/2
8	20	24	24	16	13 1/3	12
9	22 1/2	27	22 1/2	18	15	13 1/2
10	25	30	25	20	16 2/3	15
11	27 1/2	33	27 1/2	22	18 1/3	16 1/2
12	30	36	30	24	20	18
13	32 1/2	39	32 1/2	26	21 2/3	19 1/2
14	35	42	35	28	23 1/3	21
15	37 1/2	45	37 1/2	30	25	22 1/2
16	40	48	40	32	26 2/3	24
17	42 1/2	51	42 1/2	34	28 1/3	25 1/2
18	45	54	45	36	30	27
19	47 1/2	57	47 1/2	38	31 2/3	28 1/2
20	50	60	50	40	33 1/3	30
21	52 1/2	63	52 1/2	42	35	31 1/2
22	55	66	55	44	36 2/3	33
23	57 1/2	69	57 1/2	46	38 1/3	34 1/2
24	60	72	60	48	40	36
25	62 1/2	75	62 1/2	50	41 2/3	37 1/2

*Allow 1/2 inch for each bushing in estimating length of radiators.
For Tappings see page 288.

Triton Plain Two-Column Radiators

For Steam and Water

List Prices, Steam and Water

Height, inches.....	45	38	32	26	22	20	15
Per Square Foot.....	.35	.35	.38	.42	.44	.48	.53

Heating Surface

No. of Sections	*Length Inches	45 Inch Height 5 Square Feet Per Section	38 Inch Height 4 Square Feet Per Section	32 Inch Height 3 1/4 Square Feet Per Section	26 Inch Height 2 3/4 Square Feet Per Section	22 Inch Height 2 1/4 Square Feet Per Section	20 Inch Height 2 Square Feet Per Section	15 Inch Height 1 1/2 Square Feet Per Section
2	5	10	8	6 2/3	5 1/4	4 1/2	4	3
3	7 1/2	15	12	10	8	6 3/4	6	4 1/2
4	10	20	16	13 1/3	10 2/3	9	8	6
5	12 1/2	25	20	16 2/3	13 1/3	11 1/4	10	7 1/2
6	15	30	24	20	16 2/3	13 1/2	12	9
7	17 1/2	35	28	23 1/3	18 1/3	15 3/4	14	10 1/2
8	20	40	32	26 2/3	21	18	16	12
9	22 1/2	45	36	30	24 2/3	20 1/4	18	13 1/2
10	25	50	40	33 1/3	26	22 1/2	20	15
11	27 1/2	55	44	36 2/3	29 1/3	24 3/4	22	16 1/2
12	30	60	48	40	32	27	24	18
13	32 1/2	65	52	43 1/3	34 2/3	29 1/4	26	19 1/2
14	35	70	56	46 2/3	37 1/3	31 1/2	28	21
15	37 1/2	75	60	50	40	33 3/4	30	22 1/2
16	40	80	64	53 1/3	42 2/3	36	32	24
17	42 1/2	85	68	56 2/3	45 1/3	38 1/4	34	25 1/2
18	45	90	72	60	48	40 1/2	36	27
19	47 1/2	95	76	63 1/3	50 2/3	42 3/4	38	28 1/2
20	50	100	80	66 2/3	53 1/3	45	40	30
21	52 1/2	105	84	70	56	47 1/4	42	31 1/2
22	55	110	88	73 1/3	58 2/3	49 1/2	44	33
23	57 1/2	115	92	76 2/3	61 1/3	51 3/4	46	34 1/2
24	60	120	96	80	64	54	48	36
25	62 1/2	125	100	83 1/3	66 2/3	56 1/4	50	37 1/2

*Allow 1/2 inch for each bushing in estimating length of radiators. For Tappings see page 288.
Note: Any of the radiators listed can be furnished in Ornamental Pattern.

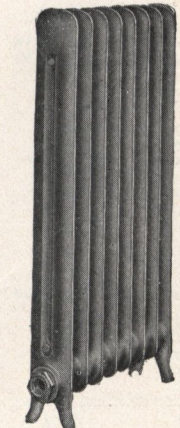


Fig. 2850
Triton One-Column
Plain Radiator, for
Steam or Water

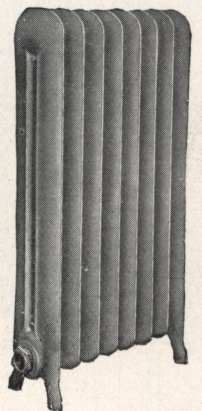
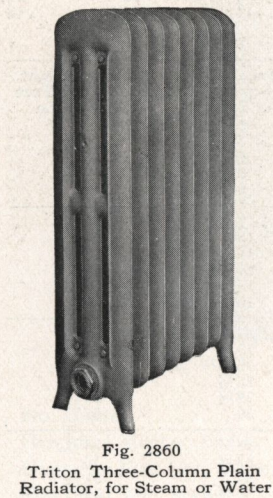


Fig. 2851
Triton Two-Column
Plain Radiator, for
Steam or Water.

Cast Iron Steam and Water Radiators

Triton Plain Three-Column Radiators
For Steam and Water

List Prices, Steam and Water



Height, inches.....							45	38	32	26	22	18
Per Square Foot.....							.35	.35	.38	.42	.44	.50
Heating Surface												
			45-Inch Height 6 Square Feet per Section	38-Inch Height 5 Square Feet per Section	32-Inch Height 4½ Square Feet per Section	26-Inch Height 3¾ Square Feet per Section	22-Inch Height 3 Square Feet per Section	18-Inch Height 2¼ Square Feet per Section				
Number of Sections	*Length Inches											
2	5		12	10	9	7½	6	4½				
3	7½		18	15	13½	11¼	9	6¾				
4	10		24	20	18	15	12	9				
5	12½		30	25	22½	18¾	15	11¼				
6	15		36	30	27	22½	18	13½				
7	17½		42	35	31½	26¼	21	15¾				
8	20		48	40	36	30	24	18				
9	22½		54	45	40½	33¾	27	20¼				
10	25		60	50	45	37½	30	22½				
11	27½		66	55	49½	41¼	33	24¾				
12	30		72	60	54	45	36	27				
13	32½		78	65	58½	48¾	39	29¼				
14	35		84	70	63	52½	42	31½				
15	37½		90	75	67½	56¼	45	33¾				
16	40		96	80	72	60	48	36				
17	42½		102	85	76½	63¾	51	38¼				
18	45		108	90	81	67½	54	40½				
19	47½		114	95	85½	71¼	57	42¾				
20	50		120	100	90	75	60	45				
21	52½		126	105	94½	78¾	63	47¼				
22	55		132	110	99	82½	66	49½				
23	57½		138	115	103½	86¼	69	51¾				
24	60		144	120	108	90	72	54				
25	62½		150	125	112½	93¾	75	56¼				

*Allow ½ inch for each bushing in estimating length of Radiator. For Tappings see page 288.

Triton Plain Four-Column Radiators
For Steam and Water

List Prices, Steam and Water

Height, inches.....							44	38	32	26	22	18
Per Square Foot.....							.35	.35	.38	.42	.44	.50
Heating Surface												
			44-Inch Height 10 Square Feet per Section	38-Inch Height 8½ Square Feet per Section	32-Inch Height 7 Square Feet per Section	26-Inch Height 5½ Square Feet per Section	22-Inch Height 4½ Square Feet per Section	18-Inch Height 3½ Square Feet per Section				
Number of Sections	*Length Inches											
2	6		20	17	14	11	9	7				
3	9		30	25½	21	16½	13½	10½				
4	12		40	34	28	22	18	14				
5	15		50	42½	35	27½	22½	17½				
6	18		60	51	42	33	27	21				
7	21		70	59½	49	38½	31½	24½				
8	24		80	68	56	44	36	28				
9	27		90	76½	63	49½	40½	31½				
10	30		100	85	70	55	45	35				
11	33		110	93½	77	60½	49½	38½				
12	36		120	102	84	66	54	42				
13	39		130	110½	91	71½	58½	45½				
14	42		140	119	98	77	63	49				
15	45		150	127½	105	82½	67½	52½				
16	48		160	136	112	88	72	56				
17	51		170	144½	119	93½	76½	59½				
18	54		180	153	126	99	81	63				
19	57		190	161½	133	104½	85½	66½				
20	60		200	170	140	110	90	70				
21	63		210	178½	147	115½	94½	73½				
22	66		220	187	154	121	99	77				
23	69		230	195½	161	126½	103½	80½				
24	72		240	204	168	132	108	84				
25	75		250	212½	175	137½	112½	87½				

*Allow ½ inch for each bushing in estimating length of radiators. For Tappings see page 288.

Note: Any of the Radiators listed can be furnished in Ornamental Pattern.

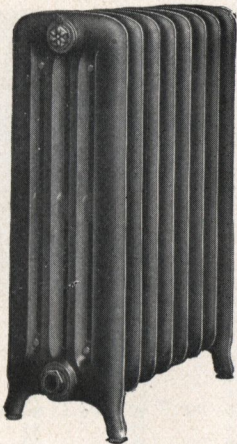


Fig. 2861
Triton Four-Column Plain
Radiator, for Steam or Water

Cast Iron Steam and Water Radiators

Triton Plain Five-Column Radiators

For Steam and Water

Height, inches.....	20	17	14
Per Square Foot.....	.48	.51	.54

Heating Surface

Number of Sections	*Length Inches	20-Inch Height 5½ Square Feet Per Section	17-Inch Height 4¾ Square Feet Per Section	14-Inch Height 4 Square Feet Per Section
2	6	11	9½	8
3	9	16½	14¼	12
4	12	22	19	16
5	15	27½	23¾	20
6	18	33	28½	24
7	21	38½	33¼	28
8	24	44	38	32
9	27	49½	42¾	36
10	30	55	47½	40
11	33	60½	52¼	44
12	36	66	57	48
13	39	71½	61¾	52
14	42	77	66½	56
15	45	82½	71¼	60
16	48	88	76	64
17	51	93½	80¾	68
18	54	99	85½	72
19	57	104½	90¼	76
20	60	110	95	80
21	63	115½	99¾	84
22	66	121	104½	88
23	69	126½	109¼	92
24	72	132	114	96
25	75	137½	118¾	100

*Allow ½ inch for each bushing in estimating length of radiators.
For Tappings, see page 288.

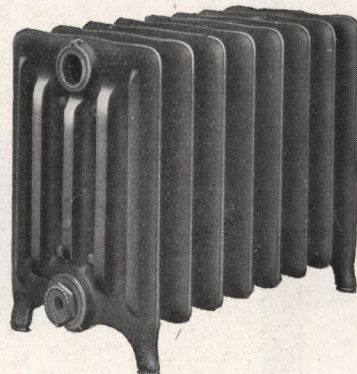


Fig. 2870
Triton Five-Column Plain Radiator
for Steam or Water

Triton Wall Radiators

Triton Wall Radiators should always be assembled with bars vertical, whether sections are built in stacks or tiers. Nos. 5-A, 7-A, and 9-A are used when sections are to be assembled end to end, and Nos. 7-B and 9-B when assembled side by side.

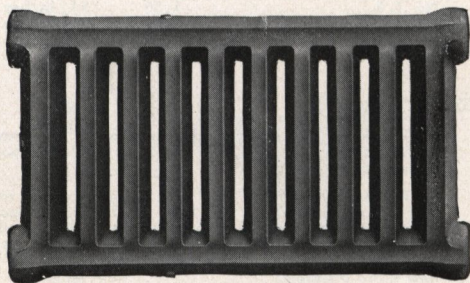


Fig. 2871. No. 7-A

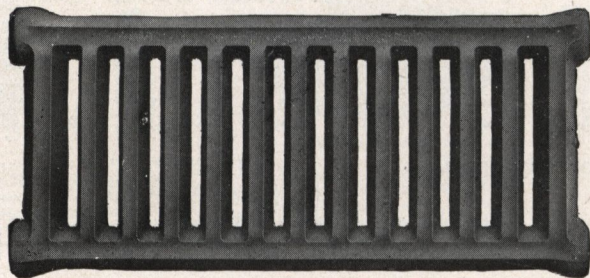


Fig. No. 2873. No. 9-A

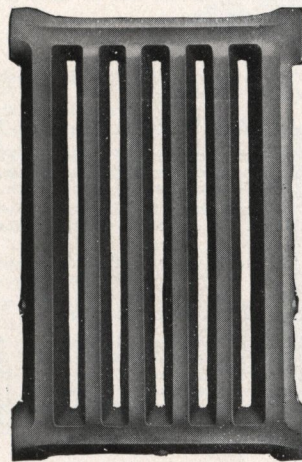
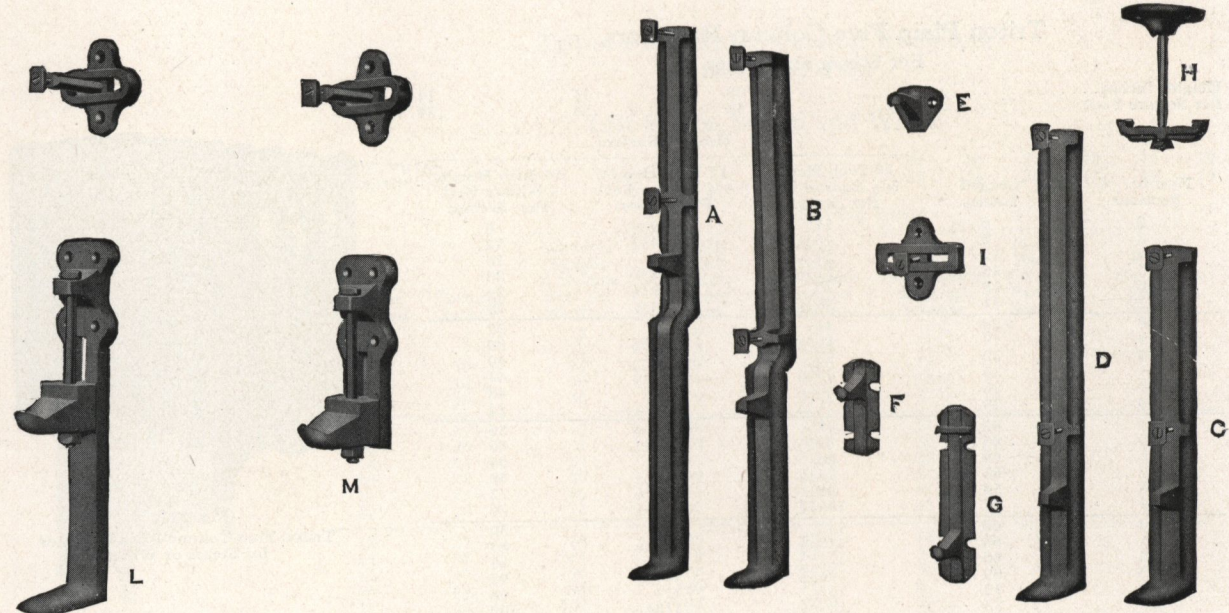


Fig. 2872. No. 7-B

Section Numbers	Height Inches	Length or Width Inches	Thickness Inches	Thickness with Brackets Inches	Heating Surface Square Feet	List Price Per Square Foot
5-A	14½	16½	3	3½	5	.41
7-A	14½	22½	3	3½	7	.38
9-A	14½	29½	3	3½	9	.38
7-B	22½	14½	3	3½	7	.38
9-B	29½	14½	3	3½	9	.38

Triton Wall Radiator Brackets



Triton Adjustable Wall Brackets

Made for supporting wall radiators in large or small tiers or stacks in buildings of any character where wall radiation is installed.

Brackets are made in two styles. "M" Brackets can be screwed to the wall to support any arrangement of wall radiation. Brackets "L" can rest on the floor or be imbedded in concrete floors in factories or other buildings where floors and walls are of concrete and attachment to walls is impossible.

Vertical movement of the seat of these brackets is 2 inches,

permitting adjustment for pitch after radiators are erected. The brackets set the outer face of the radiator $4\frac{1}{8}$ inches from the wall.

	List Price Each	Distance from Floor to Center of Tapping	Can be Adjusted to
No. L 1.....	1.50	$5\frac{1}{2}$ inches	$7\frac{1}{2}$ inches
No. L 2.....	1.75	$7\frac{1}{2}$ inches	$9\frac{1}{2}$ inches
No. L 3.....	2.00	$9\frac{1}{2}$ inches	$11\frac{1}{2}$ inches
No. M.....	1.25		

Wall Radiator Brackets

Brackets "B" to fit over a $9\frac{1}{2}$ inch high baseboard for supporting wall radiators Nos. 7-B and 9-B.

Height from Floor to Center of Tapping

No. B $5\frac{1}{2}$ from floor to center, $5\frac{1}{2}$ inches, each.....	.30
No. B $7\frac{1}{2}$ from floor to center, $7\frac{1}{2}$ inches, each.....	.36
No. B $9\frac{1}{2}$ from floor to center, $9\frac{1}{2}$ inches, each.....	.40

Brackets "D" are straight right angle brackets without offset for supporting Nos. 7-B and 9-B. Distance from floor to center of tapping $5\frac{1}{2}$ inches.

Brackets "A" to fit over baseboard for supporting Nos. 5-A, 7-A and 9-A.

Height from Floor to Center of Tapping

No. A 6 will fit over baseboard $1\frac{1}{2}$ inches. 6-inch, each..	.34
No. A 8 will fit over baseboard $3\frac{1}{2}$ inches. 8-inch, each..	.36
No. A 10 will fit over baseboard $5\frac{1}{2}$ inches. 10-inch, each..	.38
No. A 12 will fit over baseboard $7\frac{1}{2}$ inches. 12-inch, each..	.40
No. A 14 will fit over baseboard $9\frac{1}{2}$ inches. 14-inch, each..	.42
No. A 16 will fit over baseboard $11\frac{1}{2}$ inches. 16-inch, each..	.44

Brackets "C" are straight right angle brackets without offset for supporting Nos. 5-A, 7-A and 9-A. Distance from floor to center of tapping $5\frac{1}{2}$ inches.

Brackets "F," "G," "E," and "I" are screwed to wall, baseboard and wainscoting. "F" and "G" are bottom supports for all sizes; "E" and "I" top guides to hold radiator in place should always be used with "F" and "G" brackets. "F" and "G" brackets are slotted for four wood screws (not furnished by us), and "E" and "I" are for two wood screws.

Ceiling Brackets "H," for supporting radiator from ceilings, made of cast plate $3\frac{3}{8}$ inches in diameter, to be screwed to ceiling joist by four screws. Bolt furnished gives a distance of from $3\frac{1}{2}$ to 5 inches from bottom of radiator to ceiling. Other lengths on special order.

With brackets "A," "B," "D" and "C" we furnish two $1\frac{1}{4}$ stove bolts with button, and with bracket "I" one $1\frac{1}{4}$ stove bolt with button.

Style.....	C	D	E	F	G	H	I
Each.....	.30	.30	.10	.10	.10	.25	.10

Radiator Tapping List

Steam—One-Pipe Work

Radiators containing 24 square feet and under.....	1 inch
Above 24, but not exceeding 60 square feet.....	$1\frac{1}{4}$ inch
Above 60, but not exceeding 100 square feet.....	$1\frac{1}{2}$ inch
Above 100 square feet.....	2 inch

Water: Tapped for Supply and Return, Radiators containing 40 square feet and under.....	1 inch
Water: Tapped for Supply and Return, above 40, but not exceeding 72 square feet.....	$1\frac{1}{4}$ inch
Water: Tapped for Supply and Return, above 72 square feet.....	$1\frac{1}{2}$ inch

All Direct Radiators are regularly made with air valve tappings $\frac{1}{8}$ inch. When radiators are ordered for vapor or vacuum heating, specific instructions should be given as to method of tapping.

Water radiators are regularly shipped with blank at top of leg sections, but can be tapped $1\frac{1}{4}$ inches or smaller on special order. Unless otherwise ordered, all openings of Direct Radiators will have right-hand threads (except that of Wall Radiators where tapped $1\frac{1}{2}$ inches, in which case tapping at one end is right-hand and left hand on opposite end).

Steam—Two-Pipe Work

Radiators containing 48 square feet and under.....	$1 \times \frac{3}{4}$ inch
Above 48, but not exceeding 96 square feet.....	$1\frac{1}{4} \times 1$ inch
Above 96 square feet.....	$1\frac{1}{2} \times 1\frac{1}{4}$ inch

Wall Radiation—Standard and High Pressure

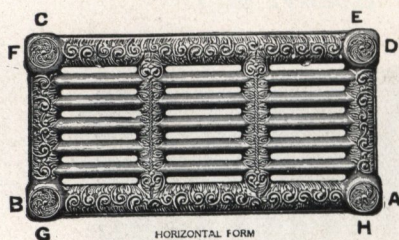


Fig. 2890

In this radiation unusual care and attention is given to assembling, testing, etc. All regular radiation is tested twice before shipment at 100 pounds hydraulic pressure.

For special steamship use regular sections are tested to 225 pounds pressure, and will be quoted on specifications.

Extra heavy sections tested as high as 350 pounds pressure can be furnished on special orders. Also quoted on specifications.

Indicate by letter on sketch location of supply and return tappings as shown in cut. Give sizes of tappings, and state whether right-hand or left-hand.

Tappings at A, D, E and C are right-hand, and at B, F, G and H, left-hand.

Wall Radiation

7-foot Sections

Dimensions: 24 x 12½ x 3 inches.

Furnished in Horizontal and Vertical form. Plain and Ornamental.

List Price, per square foot, standard test, Plain or Ornamental..... .66

9-foot Sections

Dimensions: 24 x 13 x 3¼ inches.

Furnished in Horizontal and Vertical form. Plain and Ornamental.

List Price, per square foot, standard test, Plain or Ornamental..... .66

10-foot Sections

Dimensions: 24 x 13¼ x 3⅝ inches.

Made in Plain Pattern only, in Vertical and Horizontal form.

List Price, per square foot, standard test, Plain Pattern only..... .66

Other Sections, not Illustrated

6 square feet, 21x12½ inches, Plain or Ornamental, per square foot..... .68
 5 square feet, 17x12½ inches, Plain or Ornamental, per square foot..... .70
 3¾ square feet, 17x9½ inches, Ornamental Pattern only, per square foot..... .74

Brackets and Supports



No. 25½



No. 16

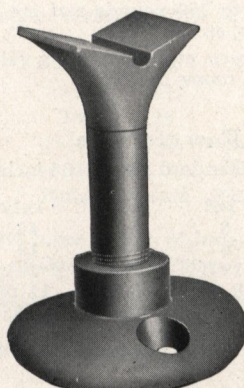


No. 17



No. 18

Adjustable Suspension Bracket No. 25½ has a lateral adjustment of 1½ inches. Adjustment may be made after bracket is secured to wall and radiator erected.



No. 28 Pipe Stand

Threaded socket accommodates ½ inch pipe, which is threaded one end only. Height of floor plate 1⅛, top support ⅝ inch.

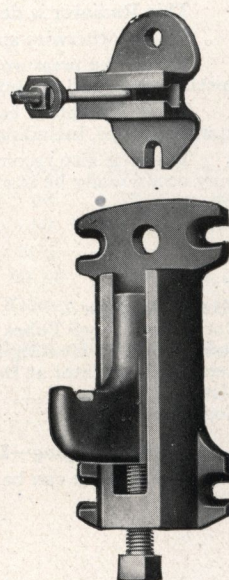
No. 29 Adjustable Wall Hanger (Hanger and Tie Bolt Bracket) provides liberally for expansion and contraction of the radiator, while set-screw provides adjustment upward or downward of 1 inch.

Distance from wall to back of radiator, 1⅜ inches.

Distance from bottom of set screw to bottom of radiator (lowest adjustment), 3⅝ inches.

Weight, Hanger and Bracket, 4¼ pounds.

For Radiators of all sizes of vertical or horizontal sections.



No. 29 Adjustable Wall Hanger

No. 25½	Suspension Wall Bracket, regular 2¼-inch projection, each.....	.80
No. 16	Bracket (top), for 9 square feet and smaller sections, each.....	.10
No. 16X	Bracket (top), for 10 square feet sections only, each.....	.15
No. 17	Bracket (bottom), for 9 square feet and smaller sections, each.....	.15
No. 18	Bracket (bottom), for 9 square feet and smaller sections, each.....	.20
No. 18X	Bracket (bottom), for 10 square feet sections only, each.....	.20
No. 29	Adjustable Expansion Hanger and Tie-bolt Bracket, each.....	.50
No. 28	Pipe Stand (top support and floor plate, without pipe), each.....	.20

The Nason "High Pressure" Vertical Tube Radiator

For Steam Pressures to 250 Pounds

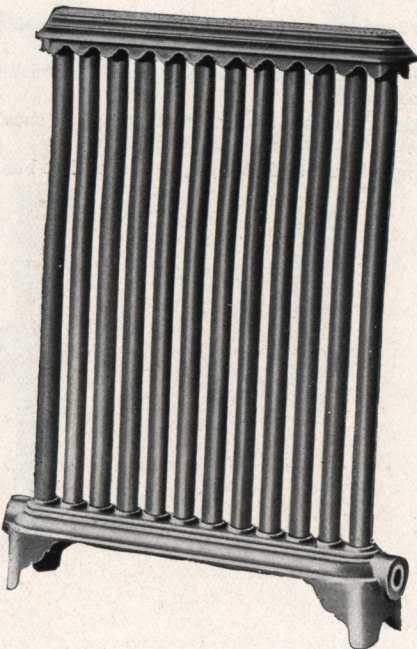


Fig. 2900. Size 1 x 12

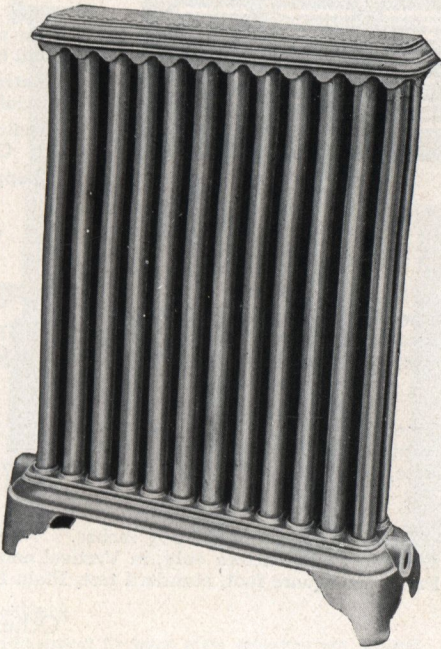


Fig. 2901. Size 2 x 12

This Radiator is designed especially for extremely high steam pressures.

Unless otherwise specified, all radiators are tested to 125 pounds steam pressure before shipment.

Where the pressure conditions exceed 125 pounds, orders and inquiries should so specify, as bases for such duty require special construction and test.

These Radiators can be furnished for working pressures up to 250 pounds and are therefore peculiarly adapted to marine service, including war vessels, steamships, tug boats, yachts, etc.

They are also recommended for high pressure power plants where, even if reducing valves are used, the boiler pressure may occasionally be inadvertently applied to the heating surface in rooms or offices.

Pattern No. 1. Single Row of Tubes

Outside Width at floor, 5½ inches. Standard Height, 35 inches

Size of Radiator	1x4	1x6	1x8	1x10	1x12	1x16	1x20	1x24
Total Number of Tubes	4	6	8	10	12	16	20	24
Square Feet of Heating Surface	4	6	8	10	12	16	20	24
Length of Radiator at Base, inches	11¼	15¼	19¼	23¼	27¼	35¼	43¼	51¼
List Price, each	4.00	6.00	8.00	10.00	12.00	16.00	20.00	24.00
Code Word	Inca	Ivor	Idol	Ivy	Indict	Inflate	Infer	Infest

Regular Tapping—Inlet, ¾ inch; Outlet, ¾ inch. Center of Openings to Floor—Inlet, 4 inches; Outlet, 3¾ inches.

This Pattern can be furnished only in the sizes listed.

Pattern No. 2. Two Rows of Tubes

Outside Width at Floor, 7½ Inches. Standard Height, 35 Inches

Size of Radiator	2x4	2x6	2x8	2x10	2x12	2x14	2x16	2x20	2x24	2x28
Total Number of Tubes	8	12	16	20	24	28	32	40	48	56
Square Feet of Heating Surface	8	12	16	20	24	28	32	40	48	56
Length of Radiator at Base	11¼	15¼	19¼	23¼	27¼	31¼	35¼	43¼	51¼	59¼
List Price, each	8.00	12.00	16.00	20.00	24.00	28.00	32.00	40.00	48.00	56.00
Code Word	Juno	Junta	Java	Jingo	Jungle	Jarvis	Jewel	Jury	Junket	Jasper

Regular Tapping—Under 30 Tubes—Inlet, ¾ inch; Outlet, ¾ inch. Larger, Inlet, 1 inch; Outlet, ¾ inch.

Center of Openings to Floor—Inlet, 4 inches; Outlet, 3¾ inches.

This Pattern can be furnished only in the sizes listed.

The Nason "High Pressure" Vertical Tube Radiator

For Steam Pressures to 250 Pounds

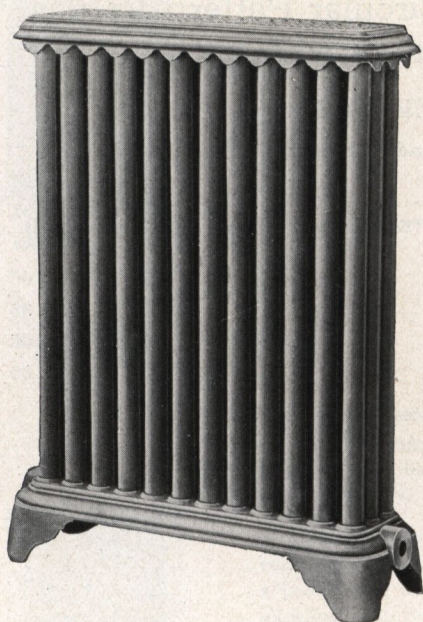


Fig. 2910. Size 3 x 12

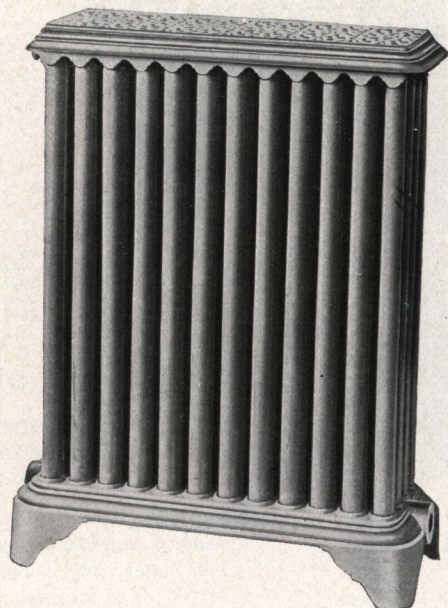


Fig. 2911. Size 4 x 12

Pattern No. 3. Three Rows of Tubes

Outside Width at Floor, $9\frac{1}{2}$ inches. Standard Height, 35 inches

Size of Radiator	3x4	3x6	3x8	3x10	3x12	3x14	3x16	3x18	3x20	3x24	3x28
Total Number of Tubes	12	18	24	30	36	42	48	54	60	72	84
Square Ft. of Surface.	12	18	24	30	36	42	48	54	60	72	84
Length at Base, in.	$11\frac{1}{4}$	$15\frac{1}{4}$	$19\frac{1}{4}$	$23\frac{1}{4}$	$27\frac{1}{4}$	$31\frac{1}{4}$	$35\frac{1}{4}$	$39\frac{1}{4}$	$43\frac{1}{4}$	$51\frac{1}{4}$	$59\frac{1}{4}$
List Price, each.	12.00	18.00	24.00	30.00	36.00	42.00	48.00	54.00	60.00	72.00	84.00
Code Word	Kato	Kola	Kernel	Kimbo	Kirtle	Koran	Kindle	Kinky	Kidney	Kingly	Kenton

Regular Tapping: Under 30 Tubes—Inlet, $\frac{3}{4}$ inch; 30 to 60 Tubes, 1 inch; larger, $1\frac{1}{4}$ inch. Outlet—Under 60 Tubes, $\frac{3}{4}$ inch; larger, 1 inch. Center of Openings to Floor—Inlet, 4 inches; Outlet, $3\frac{3}{4}$ inches.

This Pattern can be furnished only in the sizes listed.

Pattern No. 4. Four Rows of Tubes

Outside Width at Floor, $11\frac{1}{4}$ inches. Standard Height, 35 inches

Size of Radiator	4x4	4x8	4x10	4x12	4x16	4x20	4x24	4x28	4x32
Total Number of Tubes	16	32	40	48	64	80	96	112	128
Square Feet of Heating Surface	16	32	40	48	64	80	96	112	128
Length of Radiator Base, inches	$11\frac{1}{4}$	$19\frac{1}{4}$	$23\frac{1}{4}$	$27\frac{1}{4}$	$35\frac{1}{4}$	$43\frac{1}{4}$	$51\frac{1}{4}$	$59\frac{1}{4}$	$67\frac{1}{4}$
List Price, each	16.00	32.00	40.00	48.00	64.00	80.00	96.00	112.00	128.00
Code Word	Lacon	Landor	Libel	Lichen	Limbo	Lenten	Logic	Lucid	Lyric

Regular Tapping: Inlet, under 30 Tubes, $\frac{3}{4}$ inch; 30 to 60 Tubes, 1 inch; larger $1\frac{1}{4}$ inch. Outlet, under 60 Tubes, $\frac{3}{4}$ inch; larger, 1 inch. Center of Openings to Floor—Inlet, 4 inches; Outlet, $3\frac{3}{4}$ inches.

This Pattern can be furnished only in the sizes listed.

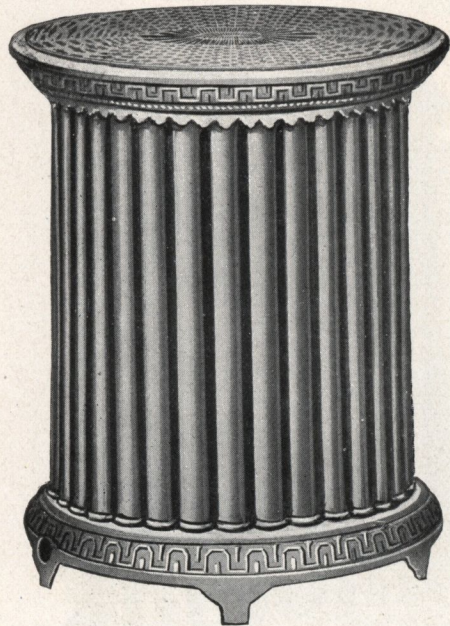


Fig. 2920. Circular Radiator

The Nason Circular Pattern Vertical
Tube Radiators

Circular Pattern
Standard Height, 3 Feet

Pattern No.	Number of Tubes	Square Feet of Radiating Surface	Outside Diameter at Floor	Inlets Inch	Outlets Inches	List Price
1	18	18	13½	¾	1¼	18.00
2	30	30	18	¾	1¼	30.00
3	54	54	23	¾	1¼	54.00
4	72	72	25¾	1	1¼	72.00

Suitable for working steam pressures up to 80 pounds.

The Nason “High Pressure” Vertical Tube Radiator

For Steam Pressures to 250 Pounds
Pattern No. 3 in Special Low Height

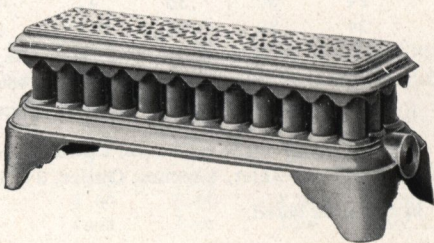


Fig. 2921. Size 3 x 12—9 Inches Over All

Special Heights

The above is an illustration of one of our No. 3 Patterns in a 9-inch height, as adapted for butlers’ pantries, yacht cabins and other conditions calling for a compact form of surface occupying the least possible space. As “foot warmers” they are far more agreeable and effective than the more expensive open grate and gas log.

All the patterns in our Vertical Tube Radiators may be furnished in any height between 9 inches and 54 inches and are suitable for all steam pressure conditions from extreme low to extreme high.

They cannot be used in a hot water system.

Heights varying from the standard 35-inch are quoted only on application.

Hot Water Expansion Tanks

These Galvanized Iron Expansion Tanks are used in hot water heating systems. Tapped top and bottom 1 inch and $\frac{1}{2}$ inch on side for water gauge; also tapped on side 1 inch for water supply.

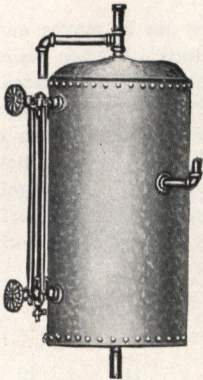


Fig. 2930
Galvanized Iron
Expansion Tank

Expansion Tanks

Capacity Gallons	Each, Without Trimming	Square Feet Radiation	Height Inches	Diameter Inches
5½	6.00	175	20	9
8	7.50	250	20	10
10	8.00	300	20	12
12	8.50	400	24	12
15	9.00	500	30	12
18	9.50	600	36	12
20	12.50	700	30	14
24	13.00	850	36	14
26	14.00	950	30	16
32	15.00	1300	36	16
42	16.50	2000	48	16
66	31.00	3000	60	18
82	37.00	5000	60	20
100	51.00	6000	60	22
120	58.00	7000	60	24

Heat Generators

These Generators are widely used for correcting defective hot water heating installations where the pipe lines are of improper size or the radiation insufficient or sluggish in circulation.

Installed below the expansion tank they operate as a two-way relief valve, permitting the water to enter the expansion tank when a pressure of ten pounds is generated throughout the system and allowing it to return to the system when the pressure in the latter falls below ten pounds.

The pressure thus maintained causes the water to circulate more rapidly and at a much higher average temperature, with the further result that all the radiators in the system become actively and uniformly efficient.

In new hot water heating installations the adoption of a generator permits the use of smaller pipe lines and radiators, thus materially reducing the initial cost of the system without impairing its heating efficiency, and at the same time effecting a noticeable economy in the amount of fuel consumed.

In the Hardt Heat Generator the pressure is maintained by a dead weight of metal.

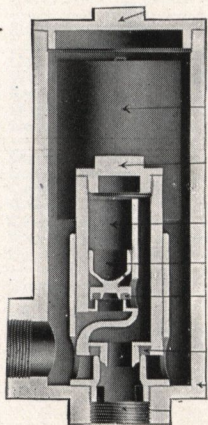


Fig. 2931
Hardt Heat Generator
Interior View

The Honeywell Generator is a mercury device, consisting of two tubes through which water and mercury circulate, these tubes terminating in small cast iron chambers, as shown in illustration.

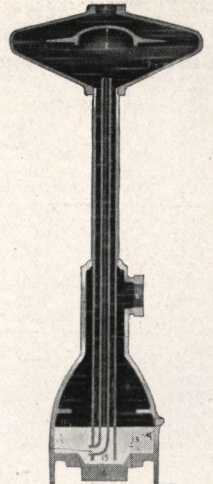


Fig. 2932
Honeywell Heat Generator
Interior View

List Prices

Hardt Generator, one size only, each.....				21.00
Honeywell Generator, Number.....	1	2	3	4
For Square Feet Radiation, up to.....	1200	2500	3500	10000
Honeywell Generators, each.....	25.00	35.00	50.00	65.00

Auclo Furnace Clock

As indicated in illustration, this is a Clock attachment that can be applied to a steam, hot air or hot water heater.

Set to operate at a predetermined hour in the morning, the Auclo automatically operates the dampers and starts the fire, resulting in a well warmed house before the rising hour.

A pull on the chain F adjusts the dampers for morning.

Each..... 3.75

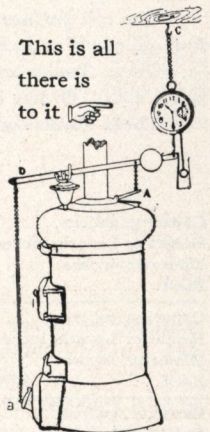


Fig. 2933
Auclo Furnace Clock

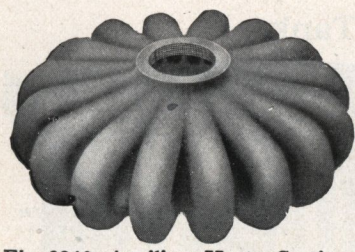


Fig. 2940. Auxiliary Heater Section.
For Side Inlet Sections add 2.00 to lists for 5, 6 and 8-inch, and 3.00 for larger sizes.

Auxiliary Heater Sections

These Sections are designed for combination heating; for use in stoves and heaters for heating rooms out of reach of hot air pipes; for heating a kitchen boiler from a stove or furnace; for heating laundry water, or for heating water with steam; for superheating steam, or for heating compressed air. Widely used to heat the kitchen by means of a radiator, which utilizes as much as possible the same source of heat supply for heating the room and also the water for domestic use. An eight-inch section placed in the furnace just above the fire is sufficient to take care of a 30-gal. boiler and at the same time a radiator which will heat a kitchen 10x12x10 feet. They embody the correct form for heating and circulation and do not interfere with the draft or any of the functions of the heater in which they are placed.

Auxiliary Heater Sections

Diameter, inches.....	5	6	8	12	14	16	20
Height, inches.....	3	3	4½	6	7¼	7¼	8
Size Pipe Connections, inches.....	1	1	1¼	2	2½	3	3½
Capacity, Square Feet of Radiation.....	30	35	75	125	200	300	500
Size Range Boiler, gallons.....	....	30	66	100	242	270	444
Iron, each.....	3.25	3.60	7.00	9.60	16.00	18.00	30.00
Brass, each.....	8.50	9.00	22.00	45.50	81.00	87.00	156.00

Note: Capacities listed are based on a continuous hot fire. Under conditions where the fire is banked for long periods, a size larger than tabulated is recommended.

Extra Heavy Galvanized Storage Tank with Coil

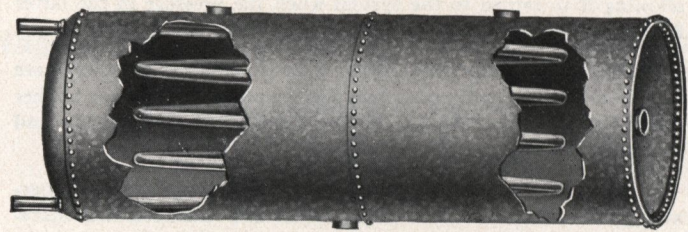


Fig. 2941. Extra Heavy Galvanized Coil Tank

These Tanks are furnished with a tinned copper coil through which steam is circulated for the purpose of heating the water. To prevent overheating, the steam inlet can be equipped with a temperature regulator as illustrated and described on page 207, which will automatically control the temperature of the water by controlling the steam supply.

These Tanks are used for hot water supply in hotels, institutions, apartment houses, or wherever steam is available. The coil surface employed is 1¼ inches outside diameter tubing, and the proportion is one lineal foot of coil to each four gallons of capacity. All coil connections are 1 inch iron pipe thread.

These Tanks are furnished for vertical and horizontal installations, but vertical boilers are furnished with vertical spiral coils. Orders should specify style wanted.

These Tanks can be furnished either Black or Galvanized.

Extra Heavy Galvanized Storage Tank with Coil

Capacity, gallons.....	18	24	30	35	40	52	66	82	100	120	144	168
Height or Length, inches.....	36	48	60	60	60	60	60	60	60	60	72	84
Diameter, inches.....	12	12	12	13	14	16	18	20	22	24	24	24
Each.....	28.00	30.00	32.00	34.00	36.00	44.00	60.00	68.00	88.00	96.00	124.00	144.00
Capacity, gallons.....	192	150	185	203	225	212	265	290	315	360	425	
Height or Length, inches.....	96	48	60	66	72	48	60	66	72	84	96	
Diameter, inches.....	24	30	30	30	30	36	36	36	36	36	36	
Each.....	164.00	136.00	164.00	172.00	192.00	180.00	212.00	228.00	244.00	276.00	312.00	
Capacity, gallons.....	520	360	420	500	575	720	470	570	650	750	850	940
Height or Length, inches.....	120	60	72	84	96	120	60	72	84	96	108	120
Diameter, inches.....	36	42	42	42	42	42	48	48	48	48	48	48
Each.....	380.00	276.00	300.00	340.00	360.00	390.00	320.00	360.00	370.00	380.00	395.00	405.00

Storage Tanks

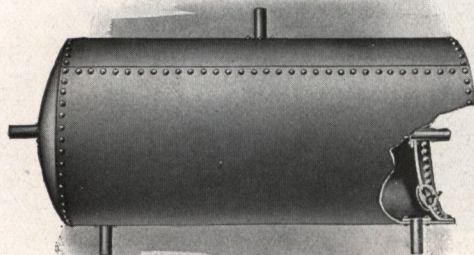


Fig. 2950

The regular test for Storage Tanks in sizes listed is 80 pounds cold hydrostatic.

Regular tappings consist of five 2-inch reinforced tapped openings, as shown in illustration. Size and style of tapping can be varied to meet all special conditions.

All tappings (reinforced or with flanges) more than five 2 inches reinforced, will be charged as extra.

Tanks without manhole have the heads therein placed convex and concave.

Tanks with manhole have both heads placed convex.

All seams in tanks listed below are single riveted.

Galvanized tanks quoted on specifications.

The following list prices include regular tappings as above described and one handhole.

Black Storage Tanks—Horizontal and Vertical

Diameter, inches.....	18	18	18	18	18	18	20	20	20	24	24
Length, inches.....	36	48	60	72	84	96	48	60	72	36	42
Capacity, gallons.....	40	53	66	79	92	106	65	82	98	71	82
Weight, Shell $\frac{3}{16}$, Heads $\frac{1}{4}$, pounds.....	200	250	290	330	370	410	275	320	360	280	300
Each, Shell $\frac{3}{16}$, Heads $\frac{1}{4}$	41.00	45.00	49.00	54.00	58.00	62.00	47.00	51.00	55.00	46.00	49.00
Weight, Shell $\frac{1}{4}$, Heads $\frac{3}{16}$, pounds.....	260	315	370	420	470	525	350	400	460	350	390
Each, Shell $\frac{1}{4}$, Heads $\frac{3}{16}$	45.00	50.00	55.00	61.00	66.50	72.00	53.00	58.00	63.00	52.00	54.00
Diameter, inches.....	24	24	24	24	24	24	24	24	30	30	30
Length, inches.....	48	60	72	84	96	108	120	120	36	48	60
Capacity, gallons.....	94	117	141	164	188	212	235	235	110	147	184
Weight, Shell $\frac{3}{16}$, Heads $\frac{1}{4}$, pounds.....	335	390	440	500	550	600	660	660	365	430	495
Each, Shell $\frac{3}{16}$, Heads $\frac{1}{4}$	52.00	57.00	62.00	68.00	74.00	80.00	86.00	86.00	56.00	61.00	67.50
Weight, Shell $\frac{1}{4}$, Heads $\frac{3}{16}$, pounds.....	425	495	565	650	720	790	860	860	460	550	635
Each, Shell $\frac{1}{4}$, Heads $\frac{3}{16}$	58.50	65.00	71.00	80.00	86.00	92.00	98.00	98.00	63.00	70.00	77.00
Diameter, inches.....	30	30	30	30	30	36	36	36	36	36	36
Length, inches.....	72	84	96	108	120	36	48	60	72	84	84
Capacity, gallons.....	221	258	294	335	372	159	212	265	318	371	371
Weight, Shell $\frac{3}{16}$, Heads $\frac{1}{4}$, pounds.....	560	640	700	770	840	460	540	615	690	780	780
Each, Shell $\frac{3}{16}$, Heads $\frac{1}{4}$	73.00	81.00	88.50	96.00	103.50	69.00	75.50	83.00	90.50	100.50	100.50
Weight, Shell $\frac{1}{4}$, Heads $\frac{3}{16}$, pounds.....	720	825	915	1000	1090	580	685	790	890	1010	1010
Each, Shell $\frac{1}{4}$, Heads $\frac{3}{16}$	84.00	95.00	103.00	111.00	119.00	77.00	86.00	95.00	104.00	116.00	116.00
Diameter, inches.....	36	36	36	42	42	42	42	42	42	42	42
Length, inches.....	96	108	120	60	72	84	96	108	120	144	144
Capacity, gallons.....	424	477	530	360	432	504	572	644	716	860	860
Weight, Shell $\frac{3}{16}$, Heads $\frac{1}{4}$, pounds.....	860	940	1020	740	835	925	1020	1120	1225	1425	1425
Each, Shell $\frac{3}{16}$, Heads $\frac{1}{4}$	109.00	117.50	126.00	103.00	112.50	122.00	132.00	142.00	153.00	175.00	175.00
Weight, Shell $\frac{1}{4}$, Heads $\frac{3}{16}$, pounds.....	1110	1215	1325	950	1070	1195	1315	1455	1575	1810	1810
Each, Shell $\frac{1}{4}$, Heads $\frac{3}{16}$	126.00	136.00	146.00	118.00	128.50	139.00	150.00	161.00	172.00	194.00	194.00

Coil Price List

Prices are per lineal foot and include necessary return bends and lock nuts, and provide for placing coil in tank, properly braced and secured.

Coil made of.....	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$	3	3 $\frac{1}{2}$	4
Black Iron Pipe with Black Return Bends and Lock Nuts.....	.50	.60	.65	.85	1.30	1.90	2.70	3.50
Galvanized Iron Pipe with Galvanized Return Bends and Lock Nuts.....	.60	.70	.80	1.10	1.80	2.70	3.50	4.50
Brass (Iron Pipe Size) Pipe, with Brass Return Bends and Lock Nuts.....	1.50	2.15	2.60	3.50	6.00	8.50	11.00	14.00
Tinned Brass (Iron Pipe Size) Pipe, with Tinned Brass Return Bends and Lock Nuts.....	1.90	2.70	3.40	4.75	7.00	9.50	12.00	15.00
Copper (Iron Pipe Size) Pipe, with Tinned Brass Return Bends and Lock Nuts.....	1.95	2.80	3.50	5.00				
Weight per lineal foot, pounds.....	2.00	2.91	3.49	4.93	8.03	10.06	12.05	15.00

Manhole Price List

Manhole in Shell of Head.....	16 x 22	11 x 16	10 $\frac{1}{2}$ x 14 $\frac{1}{2}$
Each.....	30.00	20.00	15.00
Handhole 3 $\frac{1}{4}$ x 4 $\frac{1}{2}$, each.....			5.00
Cast Iron Legs, each.....			1.25

The 16 x 22 manholes cannot be placed in tanks smaller than 48 inches in diameter. Manholes cannot be placed in 24 inch and smaller diameter tanks, as the manhole rings are so large that no tappings can be placed in 24-inch heads with the manhole. For small tanks removable cast iron heads are recommended as a substitute for manholes.

We especially urge customers, when asking for quotations or when ordering, to state in what service the tank is to be employed, as a tank suited to one condition would be totally unfitted for other uses. We can supply tanks for air, hot water storage, gasoline, or for pneumatic water systems, etc., all of which differ in construction, making specific details necessary to enable us to handle orders intelligently.

Pneumatic Water Supply Tanks

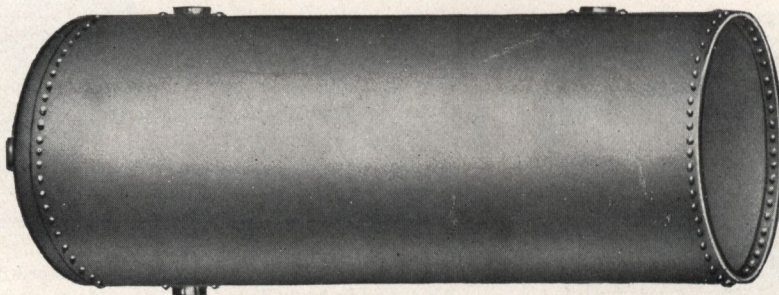


Fig. 2960. Pneumatic Water Supply Tank

These Tanks are tested to 125 pounds air and water pressure and are guaranteed tight. List prices do not include handholes and manholes. Net charge for these is: Handholes, \$2.00 each; Manholes and Covers in Shell or Head, \$7.00 each. Where Manhole is specified both heads will be placed convex.

Black Pneumatic Water Supply Tanks

Diameter, inches.....	24	24	24	24	30	30	30	30	30	30	36
Length, feet.....	5	6	8	10	5	6	7	8	10	12	5
Thickness Shell, inch.....	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$
Thickness, Convex Head, inch.....	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{3}{8}$
Thickness, Concave Head, inch.....	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{3}{8}$
Approximate Weight, pounds.....	375	425	535	645	500	575	645	725	840	960	653
Approximate Capacity, gallons.....	117	140	190	235	180	220	255	295	365	440	265
Each.....	38.00	40.00	50.00	56.00	46.00	52.00	58.00	64.00	73.00	84.00	60.00

Diameter, inches.....	36	36	36	36	36	42	42	42	42	42	42
Length, feet.....	6	7	8	10	12	14	8	10	12	14	16
Thickness Shell, inch.....	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$
Thickness, Convex Head, inch.....	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$
Thickness, Concave Head, inch.....	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
Approximate Weight, pounds.....	735	817	900	1050	1200	1364	1425	1625	1850	2150	2350
Approximate Capacity, gallons.....	315	370	420	525	635	740	575	720	865	1000	1150
Each.....	66.00	74.00	78.00	92.00	103.00	108.00	95.00	113.00	140.00	155.00	168.00

Galvanized Pneumatic Water Supply Tanks and larger capacities to 19,000 gallons quoted on specifications.

Storage Tanks for Gasoline, Naphtha and Kerosene

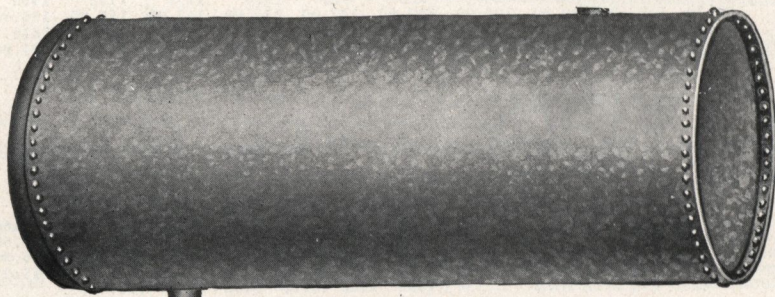


Fig. 2961. Galvanized Gasoline Tank

Fig. 2961 Galvanized Tank is designed for use on boats. They are thoroughly cleaned and galvanized both inside and outside, and are wholly free from dross on the inside. Every care is taken in their manufacture to guard against possibility of accident.

Diameters 9 and 10-inch have 1-inch filler and $\frac{1}{4}$ -inch outlet; diameters 12, 14 and 16-inch, $1\frac{1}{4}$ and $\frac{1}{4}$; larger diameters $1\frac{1}{2}$ -inch filler and $\frac{3}{8}$ -inch outlet.

Gasoline Storage Tanks—Galvanized

Diameter, inches.....	9	10	12	12	12	14	14	16	16	18	18	18	20	20	20	24
Length, inches.....	20	20	20	24	30	36	30	36	30	40	42	40	48	48	60	60
Capacity, gallons.....	4 $\frac{1}{2}$	5 $\frac{1}{2}$	7 $\frac{1}{2}$	9 $\frac{1}{2}$	12	15	17	20 $\frac{1}{2}$	23	28	27	37	46	58	70	110
Each.....	5.00	6.00	7.00	8.00	8.50	9.00	10.50	11.50	12.00	13.00	14.00	17.00	18.00	21.00	24.00	32.00

Gasoline Storage Tanks—Tar-Coated

Diameter, inches.....	18	24	30	30	36	36	42	42	42	42	42
Length, feet.....	5	5	4	5	5	6	6	8	9	11	14
Capacity, gallons.....	60	115	165	210	260	318	432	572	644	788	1004
$\frac{1}{8}$ Metal, each.....	50.00	59.00	64.00	70.00	75.00	82.00	93.00	117.00	128.00	148.00	181.00
Weight, pounds.....	280	380	450	525	575	660	780	1000	1100	1250	1610
$\frac{1}{4}$ Metal, each.....	63.00	67.00	74.00	81.00	87.00	101.00	108.00	134.00	147.00	171.00	209.00
Weight, pounds.....	350	480	560	650	740	875	1000	1235	1410	1630	2020
$\frac{3}{8}$ Metal, each.....	78.00	84.00	94.00	104.00	114.00	128.00	142.00	181.00	196.00	225.00	270.00
Weight, pounds.....	545	700	840	980	1135	1275	1465	1915	2130	2435	2890

Brazed and Welded Tanks

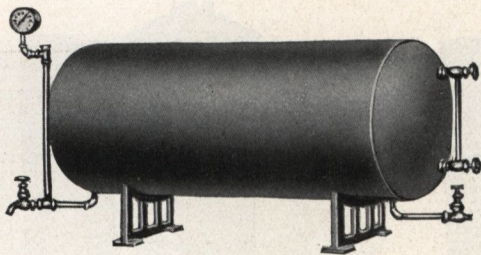


Fig. 2970. Brazed Tank

In the Brazed Tanks the copper coating around the brazed seams protects these parts from corrosion, so that they retain their original high efficiency after the material in other parts of the tank, as the result of long usage, may have become badly rusted.

Brazed tanks are guaranteed air tight under 85 pounds working pressure.

They are tested to 150 pounds and will hold air indefinitely without loss of pressure.

Brazed Pneumatic Tanks—Painted—Galvanized

Diameter, inches.....	20	20	24	24	24	24	30	30	30	30
Length, feet.....	5	6	5	6	8	10	6	8	10	12
Nominal Capacity, gallons.....	75	95	115	140	190	235	220	295	365	440
Size Openings, inch.....	1	1	1	1	1	1	1	1	1	1
List Price, Painted.....	25.00	29.00	36.00	47.00	57.00	63.00	70.00	88.00	104.00	122.00
List Price, Galvanized.....	30.00	33.00	43.00	51.00	63.00	72.00	75.00	96.00	115.00	135.00

Diameter, inches.....	36	36	36	36	36	42	42	42	42	48
Length, feet.....	6	8	10	12	14	8	10	12	14	8
Nominal Capacity, gallons.....	315	420	525	630	735	575	720	865	1000	750
Size Openings, inches.....	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/2	1 1/2	1 1/2	1 1/2	2
List Price, Painted.....	103.00	125.00	148.00	171.00	195.00	169.00	200.00	330.00	260.00	240.00
List Price, Galvanized.....	114.00	135.00	160.00	190.00	.....	.....	.....	.....	.....	.....

Unless otherwise specified, 5 and 6-foot tanks will be furnished in vertical pattern. Longer tanks are regularly tapped horizontal. Length is measured over all. Stand and trimmings not included in list price.

Brazed Pressure Tanks—Painted—Galvanized

Size, inches.....	12x36	12x48	12x60	12x72	14x36	14x48	14x60	14x72	16x48	16x60	16x72	16x96
Capacity, gallons.....	15	20	30	35	20	30	35	45	40	50	60	80
Painted, 100 pounds, each.....	7.00	9.00	11.00	12.00	10.00	12.00	14.00	17.00	17.00	20.00	24.00	30.00
Painted, 150 pounds, each.....	10.00	12.00	15.00	18.00	13.00	16.00	20.00	23.00	22.00	27.00	31.00	40.00
Painted, 200 pounds, each.....	12.00	16.00	20.00	23.00	16.00	21.00	25.00	29.00	30.00	36.00	42.00	54.00
Painted, 250 pounds, each.....	15.00	20.00	24.00	29.00	21.00	28.00	34.00	40.00	34.00	42.00	49.00	63.00
Painted, 300 pounds, each.....	19.00	24.00	29.00	34.00	24.00	30.00	37.00	43.00	38.00	46.00	53.00	68.00
Galvanized, 100 pounds, each.....	8.00	10.00	12.00	14.00	11.00	14.00	16.00	19.00	19.00	22.00	27.00	40.00
Galvanized, 150 pounds, each.....	12.00	15.00	18.00	21.00	14.00	17.00	21.00	23.00	24.00	29.00	33.00	45.00
Galvanized, 200 pounds, each.....	13.00	18.00	22.00	25.00	18.00	23.00	27.00	31.00	32.00	39.00	45.00	58.00
Galvanized, 250 pounds, each.....	16.00	21.00	25.00	30.00	24.00	30.00	36.00	43.00	39.00	45.00	52.00	67.00
Galvanized, 300 pounds, each.....	20.00	25.00	31.00	36.00	27.00	33.00	40.00	48.00	42.00	50.00	56.00	73.00

Size, inches.....	18x48	18x60	18x72	18x96	20x48	20x60	20x72	20x96	22x48	22x60	22x72	22x96	24x48
Capacity, gallons.....	50	65	75	100	60	80	95	125	75	95	115	150	85
Painted, 100 pounds, each.....	20.00	26.00	29.00	37.00	27.00	31.00	37.00	46.00	34.00	40.00	46.00	58.00	38.00
Painted, 150 pounds, each.....	30.00	36.00	41.00	53.00	36.00	43.00	50.00	64.00	44.00	53.00	61.00	78.00	57.00
Painted, 200 pounds, each.....	40.00	50.00	58.00	73.00	46.00	56.00	63.00	80.00	54.00	66.00	76.00	100.00	63.00
Painted, 250 pounds, each.....	44.00	54.00	62.00	80.00	50.00	60.00	70.00	88.00	62.00	76.00	87.00	112.00	77.00
Painted, 300 pounds, each.....	50.00	62.00	72.00	92.00	61.00	73.00	85.00	108.00	75.00	89.00	104.00	132.00	94.00
Galvanized, 100 pounds, each.....	23.00	29.00	33.00	41.00	30.00	35.00	41.00	52.00	38.00	44.00	51.00	64.00	42.00
Galvanized, 150 pounds, each.....	33.00	39.00	45.00	58.00	39.00	47.00	54.00	70.00	48.00	58.00	66.00	84.00	62.00
Galvanized, 200 pounds, each.....	43.00	54.00	61.00	79.00	50.00	60.00	70.00	89.00	59.00	71.00	81.00	107.00	68.00
Galvanized, 250 pounds, each.....	47.00	58.00	67.00	85.00	54.00	65.00	76.00	95.00	67.00	81.00	93.00	118.00	83.00
Galvanized, 300 pounds, each.....	54.00	66.00	77.00	99.00	66.00	78.00	91.00	117.00	81.00	95.00	111.00	140.00	100.00

Larger sizes to 48 x 168 inches quoted on application. Pressures listed are working pressures.

Electric Weld Pneumatic Tanks—Black—Galvanized

Diameter, inches.....	18	18	18	20	20	22	24	24	24	24	24	30	30
Length, feet.....	4	5	6	5	6	5	4	5	6	7	8	5	6
Capacity, gallons.....	53	66	79	82	98	100	94	120	144	170	188	180	215
Black, each.....	28.00	31.00	34.00	33.00	36.00	37.00	36.50	40.00	48.50	53.00	56.00	58.00	62.50
Galvanized, each.....	35.00	39.50	43.50	42.00	46.50	46.50	48.00	53.30	64.70	70.50	74.00	80.00	87.00

Diameter, inches.....	30	30	30	30	36	36	36	36	36	36	42	42	42
Length, feet.....	7	8	10	12	5	6	7	8	10	12	5	6	7
Capacity, gallons.....	250	300	372	440	265	325	365	420	530	635	360	430	500
Black, each.....	67.50	74.50	84.00	94.00	71.00	77.00	83.00	90.50	105.50	117.00	98.00	104.00	112.00
Galvanized, each.....	95.00	104.50	119.00	134.00	98.00	107.50	116.00	127.50	148.50	166.50	.....	.....	.....

Electric Weld Gasoline Tanks—Galvanized

Diameter, inches.....	12	12	12	12	12	14	14	16	16	16	18	20	22	24
Length, inches.....	18	20	22	24	30	36	30	36	30	36	48	60	60	60
Capacity, gallons.....	5 1/2	8	10	12	15	18	20	24	26	32	42	66	82	100
Regular, each.....	6.00	7.50	8.00	8.50	9.00	9.50	12.50	13.00	14.00	15.00	16.50	31.00	37.00	51.00

Rex Gas Water Heaters

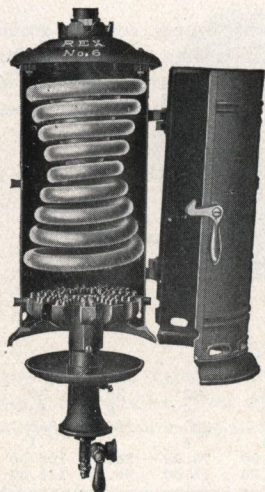


Fig. 2980. Single Copper Coil
 $\frac{3}{4}$ inch Water, $\frac{1}{2}$ inch Gas Connections.

No. 6 11 $\frac{1}{2}$ ft. Coil, each..... 15.00
 Size 7 x 18 in., shipping weight 34 lbs.
 No. 7 13 $\frac{3}{4}$ ft. Coil, each..... 18.00
 Size 7 x 20 in., shipping weight 37 lbs.

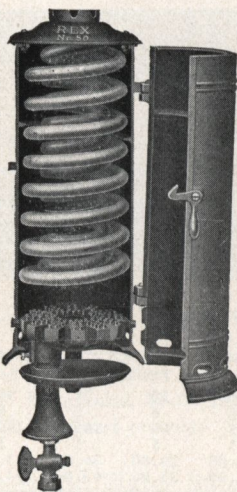


Fig. 2981. Double Copper Coil
 $\frac{3}{4}$ inch Water, $\frac{1}{2}$ inch Gas Connections.

No. 40 16 $\frac{1}{2}$ ft. Coil, each..... 18.00
 Size 7 x 22 in., shipping weight 38 lbs.
 No. 50 20 $\frac{1}{2}$ ft. Coil, each..... 20.00
 Size 7 x 22 in., shipping weight 40 lbs.
 No. 70 25 ft. Coil, each..... 22.50
 Size 7 x 24 in., shipping weight 48 lbs.

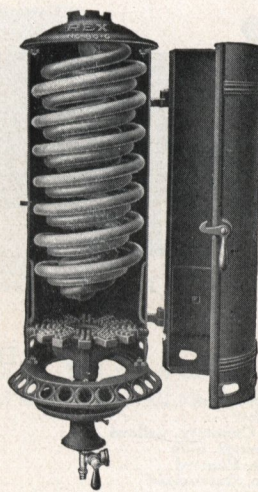


Fig. 2982. Triple Copper Coil
 1 inch Water, $\frac{1}{2}$ inch Gas Connections.

No. 80 35 ft. Coil, each..... 35.00
 Diameter..... 8 $\frac{1}{2}$ inches
 Height..... 25 inches
 Shipping Weight..... 70 pounds

Single Coil Heaters are designed for small dwellings where a limited supply of hot water is required, and are used with range boilers of 10 to 30 gallons capacity.

Double Coil Heaters are also designed for similar conditions, but for 30 to 50 gallon boilers.

Triple Coil Heaters are designed for boiler capacities 50 to 80 gallons.

Holyoke Gas and Kerosene Water Heaters

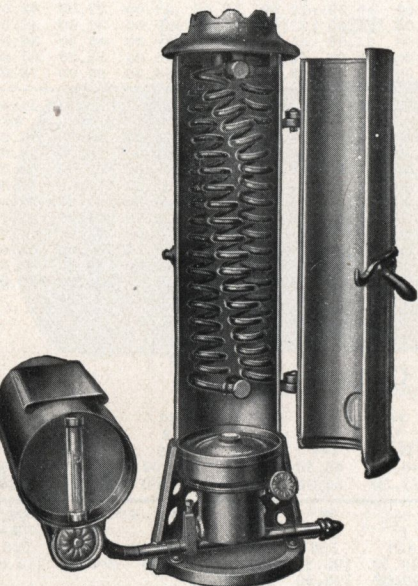


Fig. 2983

Holyoke Kerosene Water Heater

$\frac{3}{4}$ -inch water connections. 32-foot coil.
 Height, 28 $\frac{1}{4}$ inches. Floor space required,
 12 x 17 inches. Shipping weight, 55 pounds.
 List Price..... 20.00

Fig. 2983

The Holyoke Heater, using kerosene as fuel, has made it possible to supply hot water in suburban and country homes, camps and seaside resorts where gas is not available.

With the Holyoke Kerosene Heater an ample running hot water supply is assured in any house without trouble and at a cost for fuel of about $\frac{1}{2}$ cent per hour with oil at 12 cents per gallon.

Can be attached to any size range boiler up to 40 gallons, and can be operated in connection with or without the coal range.

Also made in twin construction for quick service and heavy duties.

Fig. 2984

Holyoke Gas Water Heater is a neat, compact little heater noted for its extreme simplicity, great efficiency and popular price.

As in the kerosene heater, it contains four copper coils each eight feet long, or thirty-two feet of heavy copper coils, so baffled as to get the benefit of the greatest portion of the heat.

The arrangement of the coils also prevents any possibility of back-drafts.

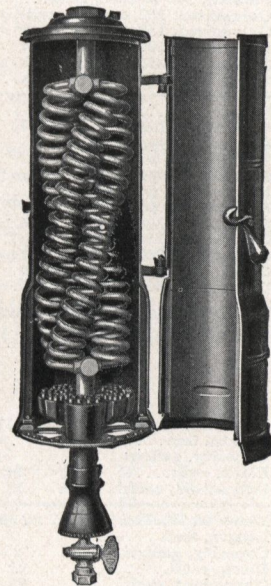


Fig. 2984

Holyoke Gas Water Heater
 $\frac{3}{4}$ -inch water, $\frac{1}{2}$ -inch gas
 connections. 32-foot coil. Size
 8 x 24 inches. Shipping weight
 48 pounds.
 List Price..... 20.00

The heaters can be attached to any size range boiler and can be run in connection with or without the coal range.

Seamless Jacketed Steam Kettles



Fig. 2990
Seamless Jacketed Steam Kettle
Standard type, with legs

These Kettles are cast in one piece, avoiding joints and rivets. The inner and outer shells are tied together by a system of oval staybolts cast at the same time as the shells. This construction permits the use of thin shells, which results in a highly efficient kettle through perfect circulation and quick radiation.

Unless otherwise ordered, Kettles are tested to 150 pounds hydrostatic pressure.

One-gallon size is supported on 3-inch fixed legs. The 4, 5, 10, 15, 20, 30, 40, 50, 65, 80, 100 and 125-gallon sizes are furnished with removable legs. Larger sizes are regularly furnished with lugs.

Standard steam connections: 1 gallon, 1/2 inch; 4 to 50 gallons, 3/4 inch; 50 to 200 gallons, 1 inch; larger sizes, 1 1/4 inches. All have two inlets on opposite sides near top of jacket, excepting the one-gallon and 4 and 10-gallon flat bottom Kettles, which have but one inlet—on the side for 1 gallon, and on the bottom for the 4 and 10 gallon.

All Kettles are supplied with one drip in bottom, same size as inlet. Draw-off connection listed at bottom of page.

Jacketed Kettles

Capacity, gallons.....	1	4	5	10	15	20	30	40	50	65
Each.....	9.00	30.00	36.00	44.00	50.00	70.00	94.00	120.00	140.00	160.00
Inside Diameter Top, inches.....	7 7/8	12 1/8	16 7/8	18 1/8	18	30	30 3/4	31 7/8	32 7/8	39 1/8
Inside Depth, inches.....	6 7/8	8 1/4	8 3/8	13 1/2	20	12 3/4	17	19 3/8	22 3/8	18 1/2
Total Height, inches.....	10 1/8	19 3/4	19 7/8	25 1/8	32 1/8	22	27	28 3/8	32 3/8	31
Weight, pounds.....	21	65	100	145	165	330	420	470	525	715
Capacity, gallons.....		80	100	125	150	175	200	250	300	350
Each.....		180.00	220.00	270.00	310.00	340.00	390.00	500.00	570.00	600.00
Inside Diameter Top, inches.....		40 3/4	41 1/2	47 1/4	47 1/2	53 1/2	53 1/2	60	62 1/2	62 1/2
Inside Depth, inches.....		23 1/4	25 7/8	26 1/2	30 3/8	27 3/4	29 3/4	31	34 1/2	38 3/8
Total Height, inches.....		34 1/2	36 3/8	38 1/4	25 1/2	25 1/2	23 1/4	22	25 1/2	29 1/2
Weight, pounds.....		755	960	985	1235	1515	2035	1890	2095	2400

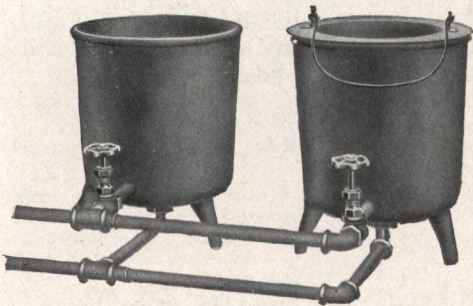


Fig. 2991. Without Pot Fig. 2992. With Pot

Steam Jacketed Glue Pots

This illustrates the application of one-gallon kettles to glue heater service and the method of connecting a train of heaters on bench. Dimensions of kettle: 7 5/8 inches inside diameter, 6 7/8 inches inside depth. Inside glue pot is 6 x 6 inches, galvanized steel, two-quart capacity. These heaters can be furnished only in the one-gallon size.

Fig. 2991. Without Pot, each..... 9.00
Fig. 2992. With Pot, each..... 11.50

These Kettles are fully described above and are tested to 150 pounds hydrostatic pressure.

Water Jacketed Glue Pots

Cast Iron Inside Pot Tinned Inside

No.	000	00	0	1	2	3	4	5	6
Capacity, pints.....	3/4	1	1 1/4	2	2 1/2	3	3 1/2	4 1/2	5
Each.....	.84	.92	1.00	1.12	1.40	1.70	2.10	2.40	2.80
Inside Pots only.....	.42	.46	.50	.56	.70	.85	1.05	1.20	1.40

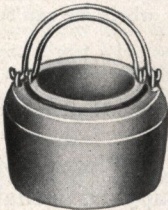


Fig. 2993
Water Jacketed
Glue Pot

Standard Outlet for Jacketed Kettles

Jacketed Kettle, Fig. 2990, can be furnished in Sizes 20 to 500 gallons with Flanged Sleeve Outlet for iron pipe connections as listed. Draw-off connections with valve can also be furnished.

Pipe Size.....	2	2 1/2	3	4	5	6
Each.....	7.00	9.00	10.00	12.00	13.00	15.00

Kettles in 1, 4, 5 and 10 gallon sizes can be furnished with pipe outlets only.



Fig. 2994
Sleeve Draw-off

The Nason Glue Heater

Gas Application

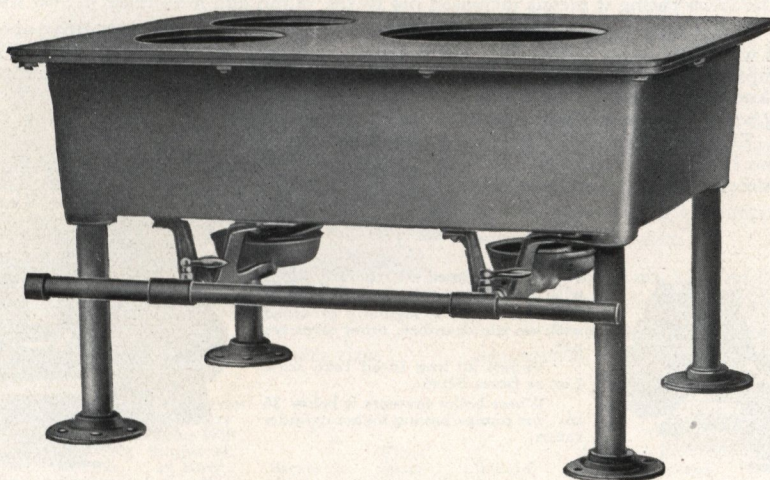


Fig. 3010. Gas Glue Heater

This illustration introduces a Heater which we have designed for glue, paste, etc., and in which gas is used as the heating agent.

The construction of the cast iron box is similar to that used in our Steam Heater, except that it is made shallower with a view to securing the greatest possible efficiency.

This Heater is made in three sizes, each of which carries the same dimensions of covers and combinations of pots as listed for the steam apparatus.

The burners used are of the most approved design, and tests which we have made show a very high heating efficiency with an economical consumption of fuel.

The No. 1 Heater is equipped with one burner, the No. 2 with two burners, and the No. 3 with three burners. The burners on the Nos. 2 and 3, having individual cocks, can be operated together, or cut out, as may be required.

Where low pressure steam is not available, the utility of this Heater will be readily appreciated.

Each Heater is furnished with iron pipe legs and flanges to the standard height shown in table below, which height is adapted for bench use.

Where it is desirable to have the Heater stand on the floor, legs and flanges will be supplied to make total height of Heater three feet from the floor, for which an additional charge of 1.50 will be made for each Heater so equipped.

Size	No. 1	No. 2	No. 3
Dimensions of Covers, inches	12 x 17	17 $\frac{3}{4}$ x 23	17 $\frac{3}{4}$ x 30
Height of Heater for Bench, inches.	14	14	14
Sizes and Combinations of Pots for which we can supply covers.	One 6-in. only One 7-in. only One 8-in. only One 9 in. only Two 5-in. only	Four 5-in. only Six 5-in. only Four 6-in. only One 12-in. only Two 9 in. only One 10-in. and Two 5-in. only One 10-in. and Two 6-in. only One 8-in. and Two 5-in. only One 8-in. and Two 6-in. only	Eight 5-in. only Two 12-in. only One 10 in. and Four 6-in. only One 12-in. and Four 5-in. only Two 10-in. and Two 5-in. only One 14-in. and Two 6-in. only
Bench Heaters, without Pots, each . .	7.50	11.50	14.40

Please Note:—Each line in this table represents the actual number and size of pots that can be supplied in that combination. In ordering do not combine or confuse any two of the lines in the table.

	Glue Pots							
Diameter, inches.....	5	6	7	8	9	10	12	14
Depth, inches.....	5	5½	7	6¾	7½	8	8	8
Capacity, quarts.....	1¾	2½	4½	6	8	11	16	21
Copper Pots, each.....	2.00	2.75	3.75	4.00	4.50	4.75	5.50	10.00
Galvanized Pots, one size only, each.....	.75							

Boiler Feed Pumps—Duplex Piston Pattern

The following sizes are selected as being the best proportioned for Boiler Feed conditions when pumping clean water. These pumps are fitted with either brass or rubber valves, as desired. When pumping cold water, soft or medium rubber valves are preferable, but when pumping hot water the valves should be hard rubber or brass.

The ratings are very conservative, but while the pumps can be speeded up to a greater capacity, it is evident that if pumps are selected on the lower rating it means increased life to the pump and a decrease in cost for maintenance.

Steam valves are of the flat slide pattern, carefully fitted to the cylinder faces, insuring positive operation and durability. All fittings, such as wrenches, drain valves, etc., are boxed and securely attached to the pump, no extra charge being made for preparing pumps for shipment in this manner. An extra charge is made for boxing pumps for export, or when they must be specially knocked down.

Packing for stuffing boxes, foundation bolts and nuts, throttle valves, governors, gauges, piping, etc., are not furnished unless at an extra cost. They will be supplied at market prices when ordered.

Regular construction includes steel piston rods, iron piston rod stuffing boxes and iron water pistons and followers. Brass fitted when so ordered at a slight additional cost.

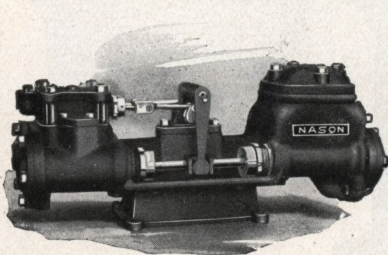


Fig. 3020. Illustrating size 3 x 2 x 4

All sizes listed are regularly fitted with brass driven water cylinder liners. 10 x 6 x 12 is regularly provided with an air chamber; other sizes are not.

Pumps all iron fitted take same List as Brass fitted.

Where boiler pressure is below 35 lbs., use pumps having higher cylinder ratios.

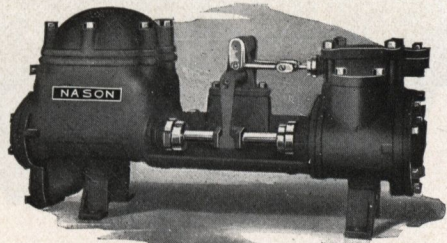


Fig. 3021. Illustrating sizes 4 1/2 x 3 x 4 to 6 x 4 x 6, inclusive

Boiler Feed Pump—Duplex Piston Pattern

For Boiler Pressure Not Exceeding 150 Pounds

Diameter of Steam Cylinder Inches	Diameter of Water Cylinder Inches	Length of Stroke Inches	Capacity in Gallons per Stroke of One Piston	Horse-power of Boilers Pump Will Supply at an Easy Speed	Diameter of Pipe for Short Lengths Inches				Floor Space Inches	Weight Pounds	List Plain Pumps	List Brass Fitted
					Steam Pipe	Exhaust Pipe	Suction Pipe	Discharge Pipe				
3	2	4	.05	75	3/8	1/2	1 1/4	1	30 x 11	185	66	76
4 1/2	3	4	.12	150	1/2	3/4	2	1 1/2	35 x 13	340	100	120
5 1/4	3 1/2	5	.20	300	1	1 1/4	2 1/2	1 1/2	39 x 16	460	122	145
6	4	6	.33	450	1 1/2	1 1/2	3	2	45 x 17	645	156	192
7	4 1/2	7	.48	550	1 1/2	2	4	3	52 x 20	1055	230	283
7	5	7	.59	650	1 1/2	2	4	3	52 x 20	1055	234	290
7	4 1/2	10	.69	750	1 1/2	2	4	3	68 x 22	1350	284	345
7	5	10	.85	900	1 1/2	2	4	3	68 x 22	1350	288	352
8	5	12	1.02	1000	1 1/2	2	4	3	72 x 23	1530	335	398
10	6	12	1.47	1400	2	2 1/2	5	4	72 x 28	2540	515	615

Low Service or Tank Pumps—Duplex Piston Pattern

These pumps are especially designed for elevating water or other liquids to a moderate height with a small consumption of steam. For work where the head to be pumped against is not too high, they are, by reason of their cylinder proportions, exceptionally economical.

They are designed for use in connection with railway water stations, breweries, distilleries, gas works, tanneries, oil works, bleacheries, sugar refineries, etc. They are designed for water pressures not exceeding 75 pounds per square inch.

Sizes 3 x 2 1/2 x 4, 5 1/4 x 4 1/4 x 5, 5 1/4 x 5 x 5, 6 x 5 x 6 and 9 x 6 x 10 have suction opening on end. Other sizes have suction opening on side. Larger sizes to 18 x 18 x 18 quoted on application.

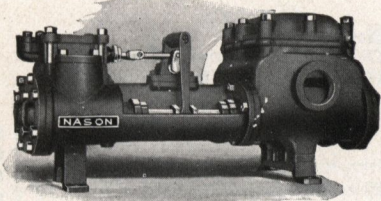


Fig. 3022. Illustrating 6 x 5 3/4 x 6 and smaller sizes

Steam Cylinder	Water Cylinder	Stroke Inches	Gallons Stroke One Piston	Piston Travel Feet Per Minute	Gallons Per Minute	Steam	Ex.	Suc.	Dis.	Floor Space Inches	List Plain Fitted	T. B. Piston Rods	Brass Water Pistons	B. L. Stuffing Boxes and Glands W. E.
3	2 1/2	4	.08	35	17.8	3/8	1/2	1 1/4	1	28 x 11 1/2	75	5	5	3
4 1/2	3 1/4	4	.19	35	41	1/2	3/4	2 1/2	2	36 x 13 1/2	130	12	6	3
5 1/4	4 1/4	5	.31	40	58	1	1 1/4	3	3	38 1/2 x 16	142	12	7	3
5 1/4	5	5	.42	40	81	1	1 1/4	4	3	39 x 16	170	13	10	3
5 1/4	5 3/4	5	.56	40	107	1	1 1/4	4	3	42 x 18	205	13	25	3
6	5	6	.51	45	92	1	1 1/2	4	3	45 x 17	180	25	10	4
6	5 3/4	6	.67	45	120	1	1 1/2	4	3	46 x 18	215	25	25	4
6	8 1/2	6	1.48	45	264	1	1 1/2	6	5	54 x 24	360	28	45	4
7	6	7	.85	55	160	1 1/2	2	5	4	57 x 19	280	38	25	6
7	7	7	1.16	55	220	1 1/2	2	6	5	58 x 24 1/2	365	40	35	6
7	6	10	1.22	70	205	1 1/2	2	5	4	67 x 22	315	45	25	6

Boiler Feed Pumps—Duplex Ram Pattern

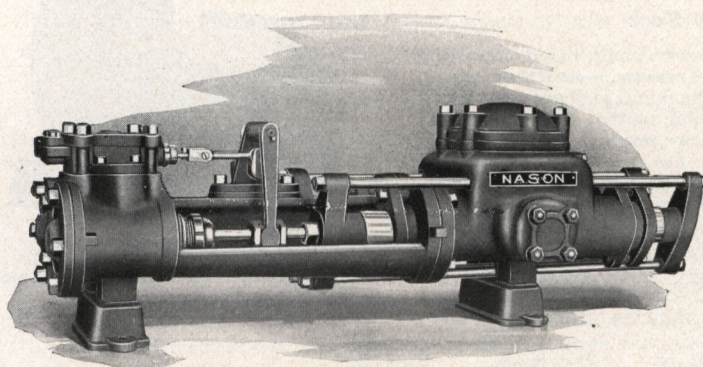


Fig. 3030. Illustrating 7½ x 5 x 6 and smaller sizes

For Discharge Pressures Not Exceeding
175 Pounds

In this style of pump the plungers being outside (i.e. externally) packed, are always in sight of the attendant engineer, and the stuffing box packing is easily adjusted, or replaced when necessary, without having to break joints or remove cylinder covers.

The element of slippage is reduced to a minimum in this type, and the volumetric efficiency is correspondingly increased.

These pumps are adapted for handling water at a high temperature, or water containing sand or grit, and for high pressure boiler feeding they offer many advantages.

Diameter of Steam Cylinder Inches	Diameter of Water Cylinder Inches	Length of Stroke Inches	Capacity in Gallons Per Stroke of One Piston	Horse-power of Boilers Pump Will Supply at an Easy Speed	Steam Pipe	Floor Space Inches	Weight Pounds	List Plain Pumps	Brass Covered Plungers	Cast Brass Plungers	Brass Throat Bushing	B. L. Plunger Glands
4½	3	4	.12	150	½	56x16	515	148	20	46	12	12
5¼	3½	5	.20	300	1	64x18	725	190	30	72	14	14
6	4	6	.33	450	1	70x19	1010	235	36	75	20	20
7½	5	6	.49	650	1½	71x23	1300	300	42	90	25	25
7½	4½	10	.69	750	1½	98x29	2500	495	50	105	25	25
10	6	10	1.22	1200	2	102x34	3600	660	75	180	Regular	42
12	7	10	1.66	1700	2½	108x37	4500	910	92	220	Regular	50

When Ram Pattern Pumps are sold brass fitted for handling hot water, they should have cast brass plungers.

Duplex Automatic Feed Pumps and Receivers

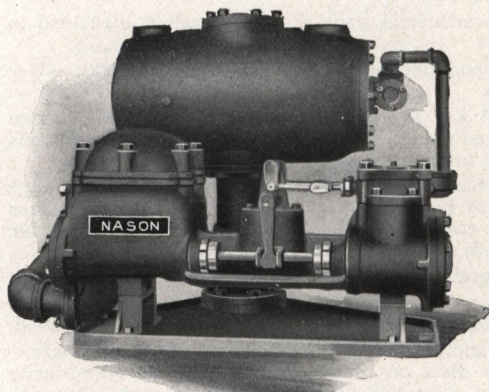


Fig. 3031

Illustrating size 6 x 4 x 6 Pump and Receiver

This is a simple and effective combination of a duplex steam pump attached to a receiving tank which receives the water of condensation and the pump automatically returns it to the boiler at the highest possible temperature.

Especially useful for returning water of condensation from steam heating coils, drying cylinders, evaporating effects, or in any place where it is desirable to return such condensation to the boiler at the highest temperature possible.

The tanks are made strong enough to stand a pressure of 100 pounds, but if the tank is liable to be subjected to a pressure in excess of 25 pounds, owing to the arrangement of the heating system with which the machine is used, an automatic relief valve is recommended, preferably placed on the receiving tank. This we can furnish of suitable size at extra cost.

These pumps are regularly fitted with brass driven water cylinder liners.

Note:—For outfits for steam pressure less than 35 lbs., combinations with our Low Steam Pressure Pumps will be quoted specially.

Duplex Feed Pumps and Receivers—Piston Pattern

Number	Size of Pump Inches	Size of Receiver Inches	Capacity Per Minute Gallons	Square Feet of Heating Surface It Will Drain	Floor Space Inches	Height Inches	Number of Inlets	Size of Inlets Inches	Weight Pounds	List Plain Pumps	List Brass Fitted
1	3 x 2 x 4	12 x 24	9	5000	32 x 22	23½	2	2	425	150	160
2	4½ x 3 x 4	12 x 24	15	12500	39 x 24	27¾	2	2	605	190	210
3	5¼ x 3½ x 5	14 x 28	36	25000	45 x 20	33	2	2½	910	230	250
4	6 x 4 x 6	16 x 30	50	40000	50½ x 32	35½	2	3	1130	280	315
5	7 x 4½ x 7	16 x 30	65	45000	75 x 37	35½	2	3	1625	395	450
6	7 x 4½ x 10	19 x 36	80	55000	81 x 39	38½	2	4	2330	525	585
7	8 x 5 x 12	19 x 36	100	70000	87 x 54	41½	2	4	3300	635	700
8	10 x 6 x 12	19 x 36	140	85000	87 x 54	46	2	4	4150	840	940

Single Stage, Single Side Suction Centrifugal Pump

For Elevations Up to 100 Feet

Fig. 3040 Centrifugal is the simplest type of power pump made, consisting primarily of a rotating impeller mounted within a casing. As there are no valves or sliding parts upon which the operation of the pump is dependent, it will handle semi-fluids or water containing gritty or solid matter as well as clear liquids. This type of pump is adapted to nearly every service. It is especially useful for irrigation, drainage, sewage pumping, fire protection, condenser service, etc. For the floor space required, these centrifugals have large capacity; the first cost is low, and the pumps will withstand severe service.

Can be supplied with pulleys for belt drive, as shown, or for direct connection to electric motors, steam turbines, gas engines, water wheels and other drives.

Centrifugals for all capacities and conditions quoted on specification.

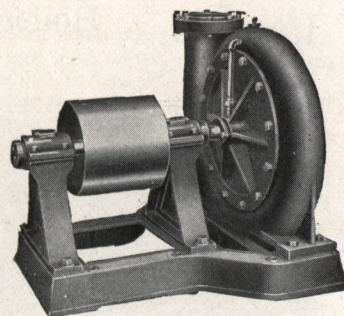


Fig. 3040. Centrifugal Pump
Type of the 3½ x 4 and smaller sizes

Sizes, Capacities and List Prices

Number	Pipe Size		Nominal Capacity in Gallons Per Minute	Diameter and Face Pulley in Inches	Floor Space Required Inches	Domestic Shipping Weight Pounds	Iron Price	Brass Fitted Price	Brass Price
	Discharge Inches	Suction Inches							
1	1	1½	30	4 x 3	11¼ x 9½	35	\$13.60	25.00	60.00
1½	1½	2	70	5 x 5	19½ x 12¾	90	23.00	36.00	115.00
2	2	3	120	6 x 6	22¼ x 16	180	38.00	60.00	200.00
2½	2½	3	200	6 x 7	24¾ x 19	250	45.00	72.00	235.00
3	3	4	270	7 x 7	26½ x 22	375	55.00	88.00	280.00
4	4	5	470	10 x 10	33¼ x 29¼	500	80.00	130.00	500.00
5	5	6	750	12 x 12	37¼ x 33	750	100.00	180.00	830.00
6	6	8	1050	14 x 14	42¾ x 37¼	1100	125.00	210.00	1170.00
8	8	10	2000	16 x 14	48 x 47	1500	220.00	475.00	
10	10	12	3000	18 x 16	53 x 53	2300	285.00	645.00	
12	12	15	4200	20 x 18	58 x 59	2800	405.00	930.00	

Single-Acting Triplex Plunger Pumps

For 150 Pounds Working Pressure or 350 Feet Elevation

Specifications

Close grain cast iron Frame, in *one piece, with cross heads, guides and cylinders, forming exceptionally rigid construction and accurate alignment of all working parts.

High carbon open hearth steel crank shaft, accurately machined to gauge.

Charcoal iron gear and pinion, machine-cut from the solid. Gear ratio 5 to 1.

Crossheads—Sizes 4 x 6 and larger, fitted with adjustable bronze shoes, which run in bored guides. Sizes 3½ x 4 and smaller, crossheads are cylindrical in form; made of bronze and run in bored guides.

Connecting Rods—Sizes 4 x 6 and larger, strap head and wedge adjustment with bronze boxes at crank end and adjustable bronze boxes, marine type, at crosshead end. Sizes 3½ x 4 have adjustable boxes babbitted at crank end and bronze bushings at crosshead end.

Cylinders are close-grained cast iron, accurately machined.

Plungers—Sizes 2½ x 4 and larger are fitted with cast iron plungers. Sizes 2 x 3 and smaller have bronze plungers accurately machined.

Valves—Sizes 3 x 4 and smaller, Bronze Valves, 3½ x 4 and larger—for cold water, rubber discs on bronze grid seats with cylindrically wound springs. For hot water we recommend the grid seat valve with special disc.

*Except 4 x 6, which is cast in two pieces.

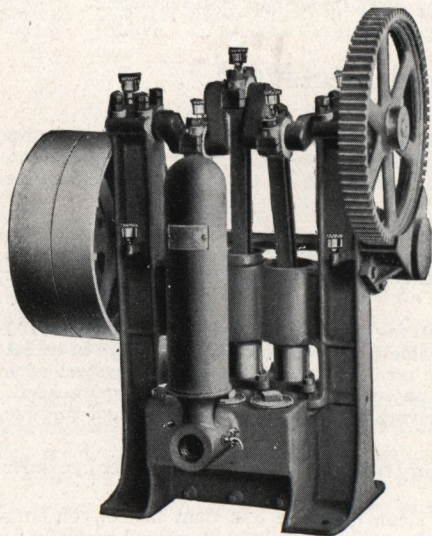


Fig. 3041. Triplex Plunger Pump

Gallons Per Minute	Diameter Plunger	Stroke Inches	Gallon Per Revolution	Revolutions Per Minute	Horse-power 100 Pounds	Suction Inches	Discharge Inches	Size T and L Pulleys	Price
2	1¼	2	0.031	67	.30	¾	¾	12 x 1½	50.00
4	1¾	2½	0.078	52	.32	1	1	12 x 2½	70.00
6	2	3	0.122	50	.70	1¼	1¼	12 x 2½	80.00
6	1¾	2½	0.078	77	.53	1	1	12 x 2½	70.00
9	2	3	0.122	75	.90	1¼	1¼	12 x 2½	80.00
12	2½	4	0.255	48	1.10	1½	1½	15 x 3	120.00
18	2½	4	0.255	71	1.60	1½	1½	15 x 3	120.00
18	3	4	0.367	50	1.60	1½	1½	15 x 3	140.00
25	3	4	0.367	70	2.00	1½	1½	15 x 3	140.00
25	3½	4	0.501	50	2.20	2	2	15 x 3	180.00
40	3½	4	0.501	80	3.50	2	2	15 x 3	180.00
40	4	6	0.978	42	3.30	2	2	20 x 3	260.00
50	4	6	0.978	52	4.30	2	2	20 x 3	260.00
60	4	6	0.978	62	5.00	2	2	20 x 3	260.00

Triplex Pumps of larger sizes and for all capacities and conditions for which this type of pump is suited will be quoted on specifications.

Pyramid Double-Acting Piston Power Pump

The "Pyramid" is a moderate-priced, single cylinder double-acting Power Pump. It is adapted especially for water supply on farms, in country homes, mills, small factories, hotels, apartment houses, railway tank stations—in fact for all services where 6 to 114 gallons per minute are required against heads up to 175 feet.

In addition to its use as a water supply pump, the "Pyramid" can be used for pumping light oils, such as kerosene and gasoline. The latter service requires special valves and gaskets, which are supplied at extra cost. It conforms to the requirements of the National Board of Fire Underwriters, and for gasoline service is known as the "Chicago" Gasoline Pump.

Illustration shows tight and loose pulleys for belt drive, but pump can be furnished with gearing for direct connection to gasoline engines or electric motors.

The general construction of the pump is such that it combines ample strength and large capacity in the most compact form. Its over-all dimensions are smaller than those of any similar pump of the same capacity and pressure. Its large and easy waterways, few parts and high grade construction easily make it the leader in its class.

For pneumatic water supply systems we can supply all sizes equipped with a special air attachment, so the pump will furnish both the water and air pressure for the tank.

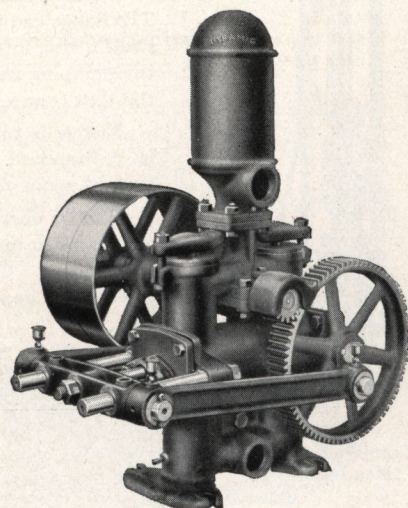


Fig. 3050. Pyramid Double-acting Piston Power Pump

Pyramid Double-Acting Piston Power Pump

Pistons		Displacement Revolutions Crank Shaft Gallons	Usual Speed and Displacement per Minute		For Elevation to Feet	Horse- Power at Catalogue Rating	Size Pipe		Geared	Tight and Loose Pulleys Inches	Weight Pounds	Price Regular Construc- tion with Tight and Loose Pulleys
Diameter Inches	Stroke Inches		Rev.	Gals.			Suction Inches	Discharge Inches				
2½	4	.162	38	6	175	.50	1¼	1¼	5 to 1	8 x 2½	160	60.00
3	5	.293	41	12	175	1.00	1½	1½	5 to 1	15 x 2½	280	82.50
4	5	.531	40	21	175	1.50	2	2	5 to 1	15 x 3	325	97.50
5	5	.823	40	33	175	3.00	2½	2½	5 to 1	16 x 4	500	127.50
6	6	1.440	40	57	175	5.00	3	3	5 to 1	20 x 4	645	150.00
6	12	2.870	40	114	175	7.50	4	4	6 to 1	26 x 4	875	225.00

The ratings in the above table are based on the assumption that cold water is the liquid pumped.

Extra price for Air Attachment, 5.00.

Construction: In the "Pyramid" the base, cylinder, bearings and one cylinder head are cast integral, giving a remarkably stiff and rigid construction. Casting the bearings as a part of the cylinder keeps the gearing absolutely in line, greatly decreasing the wear and increasing the life of the pump proportionately. The cylinder is brass-lined and provided with large suction valves just below the bore of the cylinder; these valves are easily accessible through two hand-holes, the covers of which can be removed by backing off one bolt. The discharge valves are above the cylinder and reached through handholes located at either side of the air-chamber. To remove the hand-hole plates it is simply necessary to loosen one bolt and slip this bolt out of place, which frees the clamp holding the valve cover in position, making it impossible for the valve cover caps to rust in position. On the forward end of the cylinder are cast two substantial lugs, into which are pressed and secured by heavy nuts two carefully machined steel rods, which act as a guide for the cross-head. This construction takes the lateral strain from the cylinder head and eliminates any tendency the cylinder head packing might have to work out.

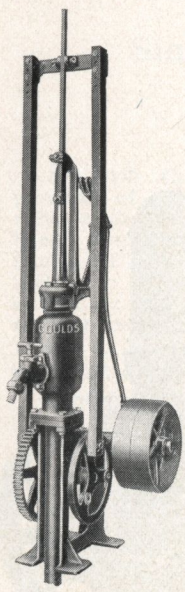


Fig. 3060
Combined Pumping
Head and Jack

Combined Pumping Head and Jack with Open Base

The open hollow base employed is an improvement over any construction hitherto offered, and the ease with which this pumping head can be installed cannot but make it popular with well drillers, farmers, etc.

When installing, the head itself need not be touched until the last length of pipe is let down. The flange can then be screwed on the end of the pipe and the base shoved under it with the pipe itself fitting into the hollow base. The entire pipe is thus supported while the rod connection to the pumping head is made. The two sections are then bolted together with the flange between, the jack connected up and the head is completely and rigidly installed.

Flange is tapped 2½-inch but can be bushed for smaller pipe, pump rod is tapped ⅝-inch U. S. Standard and can be fitted for well rod for cylinder used. Air chamber is tapped 2½-inch back of spout for connection to overhead tanks.

Can be operated by hand, windmill or power or by belt drive from a line shaft. Pulleys of any diameter up to 28-inch may be used. With pulleys of this size the pump is adapted for electric motor drive. Cylinders similar to Fig. 3200-3203 are required with this working head and cost extra. The gear has an over-all reduction of 5 to 1.

Stroke Inches	Suction Inches	Discharge, Inches	Lift and Force* Feet	Geared	Tight and Loose Pulleys Inches	Approx. Weight Pounds	List Price
Adjustable 6, 8 or 10	2½	Back of Spout 2½ iron pipe	1¾-inch cyl. 190 2¼-inch cyl. 120 3½-inch cyl. 50 4-inch cyl. 40	5 to 1	12 x 2½	200	35.00

*These ratings are for power operated head.

Hand and Power Pumping Head For Wells 40 to 75 Feet Deep

Fig. 3061. A strong, serviceable Working Head for hand or belt drive. A vertical column bolted to the bed plate supports the shaft, which is provided with a crank handle, tight and loose pulleys and face plate with wrist pin which operates the pitman and connecting rod. The discharge is inside threaded for iron pipe and the suction is regularly tapped for 2-inch iron pipe, but can be fitted for 1¼ or 1½-inch pipe if so ordered. The connecting rod is regularly cut ⅝-inch, but can be fitted to suit well rod of cylinder as ordered.

Stroke Adjustable	Suction Pipe Inches	Discharge Pipe, In.	Approximate Weight Pounds	Pulleys Each Inches	*Lift and Force	Price
4, 5 or 6 inches	2	1¼	170	15 x 3	{ 2½ in. cyl., 50 ft. } { 3 in. cyl., 40 ft. }	48.75

*Depth of wells to which Pumping Apparatus may be adapted by placing cylinders within 25 feet or less of water, or total lift and force from supply to point of delivery.

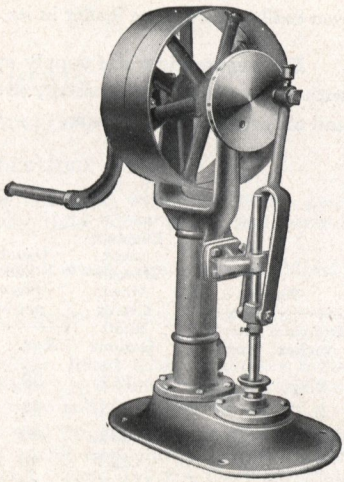


Fig. 3061
Hand and Power Pumping Head

Improved Pumping Jack

Fig. 3062 is a Geared Power Attachment which can be used to connect any windmill pump standard by belt to any source of power. All that is necessary in attaching the jack is to clamp it to the standard near the base, disconnect the pump lever and bolt the crosshead to the windmill rod. Pump can be operated by hand, windmill or engine, as desired, by changing one pin and adjusting the crosshead or lever on the pump rod.

The stroke is adjustable, 6, 8 or 10 inches, by changing the wrist pins in the wheels. Tight and loose pulleys are 12 inches diameter, 2½ inches face, and the jack is geared 5 to 1. The pinion is covered by a guard, and the position of the gears is such as to eliminate side thrust on the plunger rod. This Jack will operate any of the windmill pump and standards shown on preceding pages.

Stroke Adjustable	Geared	Tight and Loose Pulleys, Inches	Weight Pounds	Price Jack Only
6, 8 or 10 inches	5 to 1	12 x 2½	94	12.50

For ratings, see Ratings of Pumps and Standards which can be used with this Jack.

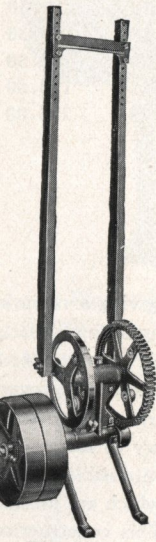


Fig. 3062
Improved
Pumping Jack

Pump Jacks

Fig. 3070 is especially designed to adapt our Diaphragm Pumps and pumps of the Challenge type, Nos. 2 to 8, for engine drive, making a line of low-priced, power-driven pumps.

Jack is furnished with 12 x 3-inch pulley for belt drive, or with machine-cut auxiliary gear and engine pinion for direct connection to engine.

It consists of a strong box-type frame, carrying two shafts with gear and pinion. It has babbitted bearings, which are large and are lubricated by means of grease cups.

The extended end of the pinion shaft can be fitted with pulley for belt connection, or gear for gear connection. These accessories are usually furnished by the engine builder, but we can supply them at an increase in price.

The gear ratio of the Jack is 5 to 1.

In ordering Jack, specify Fig. Number and style and size pump.

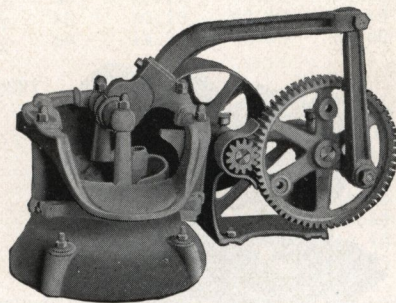


Fig. 3070. As used with Fig. 3180 Diaphragm Pump

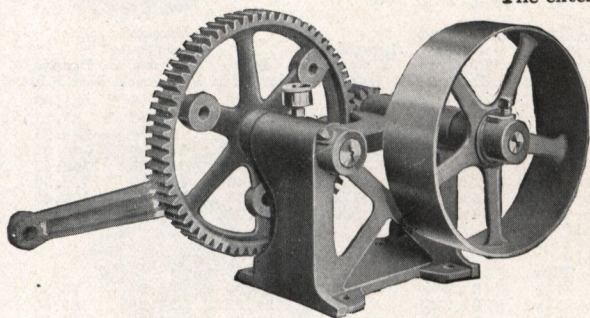
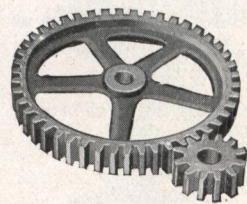


Fig. 3070. Pump Jack

As furnished for belt connection to engine. When furnished for gear connection the gear and pinion at the top are supplied.

Fig. 3070

Stroke, Inches	Geared	Approximate Weight Pounds	Floor Dimensions Inches	Fitted with	Price
4, 6, 8 and 10	5 to 1	78	7 $\frac{1}{8}$ x 10 $\frac{1}{4}$	Pulley	15.00
4, 6, 8 and 10	10 to 1	73	7 $\frac{1}{8}$ x 10 $\frac{1}{4}$	Engine Gearing	21.25

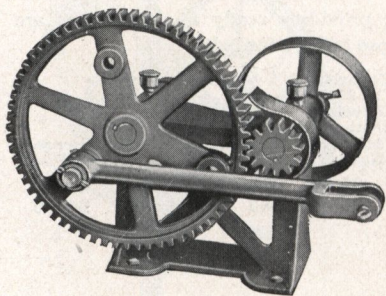


Fig. 3071. Pump Jack

Fig. 3071 is very similar to style shown above, but of lighter construction.

It is used for adapting our "New Alert" Pumps to power drive.

All that is necessary to connect this Jack to the pump is to drill a hole in the pump lever 2 inches above the plunger rod and attach the connecting rod of the Jack with a pin. The Jack consists of a strong box frame carrying the gear and pinion shafts. The bearings are provided with grease cups for lubrication. The gear

ratio is 5 to 1. Furnished regularly with 8-inch by 2 $\frac{1}{2}$ -inch single tight pulley.

Wood rod 1 $\frac{1}{4}$ x 1 $\frac{3}{8}$ x 36 inches in length, with connections for flat or round handle, can be furnished with this Jack at 1.25 extra list. With these connections the Jack can be used to operate any ordinary well pump.

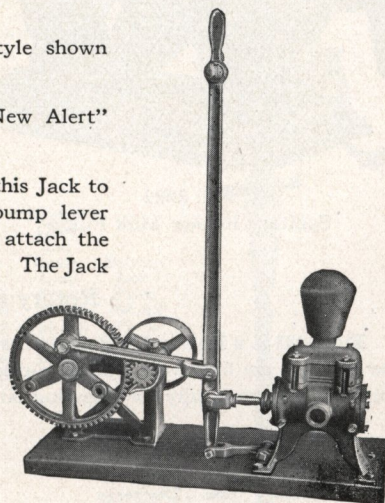


Fig. 3071. Jack Connected to "New Alert" Air and Water Pump

Stroke, Inches	Geared	Approximate Weight Pounds	Base Dimensions, Inches	Price
6, 8 or 10	5 to 1	48	6 $\frac{3}{8}$ x 9 $\frac{7}{8}$	11.25

Power Rotary Force Pumps

Lift and Force 60 Feet

These Pumps are made with heavy cast iron bases. They are fitted with tight and loose pulleys, supported by bearings with babbitted boxes.

When furnished for hot liquids, supplied with metallic suction valves at the following extra list prices: Nos. 1, 2 and 3, 1.75; Nos. 4 and 4A, 2.00; Nos. 5 and 5A, 2.50; No. 6, 3.50. Hot liquids must flow to the pump.

Bronze Pumps have all parts coming in contact with the liquid of bronze and should be used when wines or saline solutions are pumped.

Iron Pumps have leather valves; others have bronze valves.

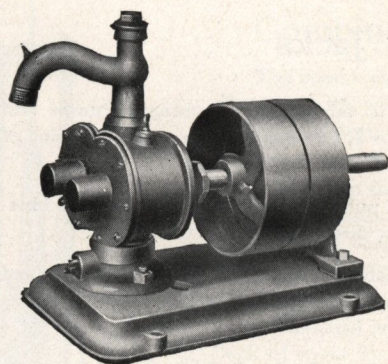


Fig. 3080

Rotary Force Pump with Spout

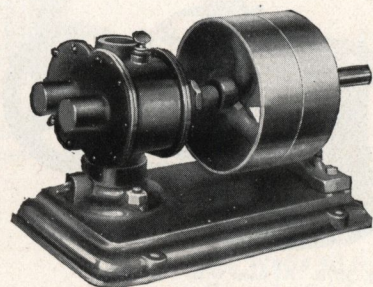


Fig. 3081

Rotary Force Pump without Spout

No.	Capacity per Minute	Suction Pipe Inches	Dis- charge Hose Inches	Tight and Loose Pulleys Inches	Approximate Weight in Pounds	Bronze Case and Cams		Bronze List Price
	200 Revolutions Gallons					Iron List Price	Case and Cams List Price	
1	20	1 1/4	1	8 x 2 1/2	70	19.75	66.15	81.00
2	25	1 1/4	1	8 x 2 1/2	75	22.00	75.60	87.75
3	28	1 1/2	1 1/4	8 x 2 1/2	84	23.25	85.00	101.25
4	50	2	1 1/2	12 x 3 1/2	145	44.50	114.00	146.25
4A	50	2	1 1/2	16 x 3 1/2	161	50.30	122.85	160.85
5	55	2	2	12 x 3 1/2	154	47.80	131.60	175.50
5A	55	2	2	16 x 3 1/2	175	53.85	140.40	190.00
6	65	2 1/2	2 1/2	24 x 4	320	80.00	197.45	255.95

Fig. 3080

No.	Capacity per Minute	Suction Pipe Inches	Dis- charge Hose Inches	Tight and Loose Pulleys Inches	Approximate Weight in Pounds	Bronze Case and Cams		Bronze List Price
						Iron List Price	Case and Cams List Price	
1	20	1 1/4	1	8 x 2 1/2	66	19.00	64.80	78.30
2	25	1 1/4	1	8 x 2 1/2	73	21.25	74.25	85.00
3	28	1 1/2	1 1/4	8 x 2 1/2	78	22.35	83.70	98.55
4	50	2	2	12 x 3 1/2	137	43.00	111.15	140.40
4A	50	2	2	16 x 3 1/2	153	49.10	120.00	155.00
5	55	2	2	12 x 3 1/2	146	46.00	128.70	169.65
5A	55	2	2	16 x 3 1/2	167	52.25	137.50	184.25
6	65	2 1/2	2 1/2	24 x 4	300	77.50	193.75	248.60

Fig. 3081

Total Lift and Force 60 feet from supply to point of delivery. Pump not more than 20 feet above liquid.

Sanitary Rotary Milk Pump

Fig. 3082 illustrates our Sanitary Rotary Milk Pump which is especially recommended for use in creameries or wherever food products are handled in liquid or semi-liquid form. Can be easily and quickly taken apart without tools. Face plate is attached to case by means of the iron clamp, which is quickly detachable, providing ready access. Cams are removable. Fitted with tight and loose pulleys for belt.

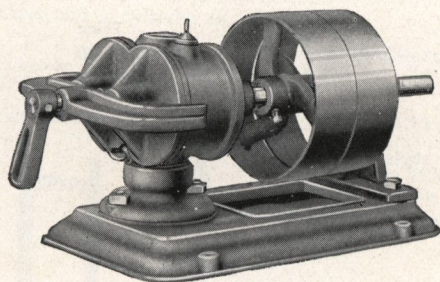


Fig. 3082

Sanitary Rotary Milk Pump

No.	Capacity per Minute	Suction Pipe Inches	Dis- charge Pipe Inches	Tight and Loose Pulleys Inches	Approximate Weight in Pounds	Bronze Case and Cams		Bronze List Price
						Iron List Price	Case and Cams List Price	
1	20	1 1/4	1 1/4	8 x 2 1/2	78	21.00	87.00	
2	25	1 1/4	1 1/4	8 x 2 1/2	85	24.00	94.00	

Rotary Oil Pump

Fig. 3083 is a Rotary Oil Pump mounted on a frame with a single tight pulley. The bearings are babbitted. Suction connection can be made at either side of the pump. Used principally for pumping oil. It has no valves.

No.	Capacity per Minute	Suction Pipe Inch	Discharge Pipe Inch	Pulley Inches	*Lift and Force Feet	Approximate Weight Pounds	Iron Price List	†Bronze Price List
	200 Revolutions Gallons							
2	10	1	1	10 x 2 1/2	100	60	25.00	74.25

*Total lift and force from supply to point of delivery. Pump not more than 20 feet above liquid.

†"Bronze" pump has all parts coming in contact with the liquid of bronze.

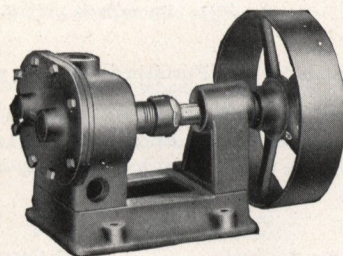


Fig. 3083. Rotary Oil Pump

Hand Rotary Force Pumps

Lift and Force 60 Feet

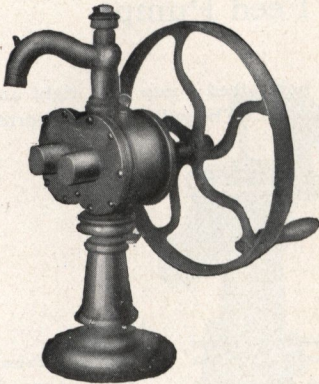


Fig. 3090
Hand Rotary Force Pump

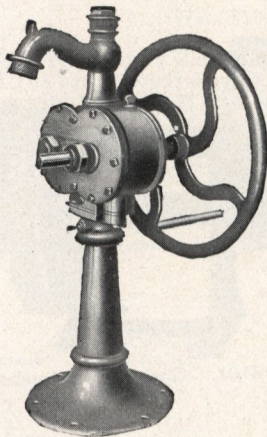


Fig. 3091
Hand Rotary Force Pump

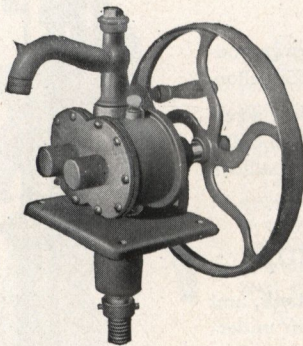


Fig. 3092
Hand Rotary Force Pump
Lift and Force, 60 feet

Fig. 3090. This Pump has an elevated base, spout and top discharge. It is furnished with flywheel for hand operation only. The top discharge can be used for connecting to an overhead tank or to an upper floor suction.

Fitted with metallic suction valves for hot liquids, at extra list prices: Nos. 1, 2 and 3, 1.75. Hot liquids must flow to the pump. Bronze Pumps have all parts coming in contact with the liquid of bronze and should be used when wines or saline solutions are pumped. Iron Pumps are regularly fitted with leather suction valves. Those with bronze case and cams, and all bronze, have bronze valves.

No.	Capacity per Minute 100 Revolutions Gallons	Suction Pipe Inches	Discharges		Diameter Balance Wheel Inches	Approximate Weight Pounds	Iron List Price	Bronze Case and Cams List Price	Bronze List Price
			End of Spout Pipe Inch	Top of Spout Pipe Inch					
1	10	1 1/4	1	1	14 1/2	50	17.25	55.35	68.85
2	13	1 1/4	1	1	14 1/2	55	19.25	62.10	75.60
3	17	1 1/2	1 1/4	1 1/4	14 1/2	64	19.75	68.85	85.00

No.	Capacity per Minute 100 Revolutions Gallons	Suction Pipe Inches	End of Spout Pipe Inch	Top of Spout Pipe Inch	Diameter Balance Wheel Inches	Approximate Weight Pounds	Iron List Price	Bronze Case and Cams List Price	Bronze List Price
1	10	1 1/4	1	1	20	65	19.75	56.70	70.20
2	13	1 1/4	1	1	20	71	22.25	63.45	76.95
3	17	1 1/2	1 1/4	1 1/4	20	80	22.50	70.20	86.40
4	27	1 1/2	1 1/2	1 1/2	20	134	38.85	95.00	127.25
4A	27	1 1/2	1 1/2	1 1/2	36	180	46.25	101.00	133.10
5	36	2	2	2	20	140	44.75	109.70	153.50
5A	36	2	2	2	36	188	52.25	115.55	159.40
6	45	2 1/2	2 1/2	2 1/2	36	212	68.00	146.25	204.75

Total Lift and Force 60 feet from supply to point of delivery. Pump not more than 20 feet above liquid.

Fig. 3091 is the same general construction as Fig. 3090, but on No. 4 and larger sizes it has a taller base and larger flywheel. The flywheel has a round rim and the pump is for hand operation only. It is equipped with a spout and also has a top discharge.

Fitted with metallic suction valves at the following extra list prices: Nos. 1, 2 and 3, 1.75; Nos. 4 and 4A, 2.00; Nos. 5 and 5A, 2.50; No. 6, 3.50.

Above details as to hot liquids, valves, etc., also apply to Fig. 3091 construction.

Fig. 3092. Same type case as above with flat rim flywheel for hand operation only. Mounted on flat cast iron base. Suction and discharge fitted for hose, but can be fitted for iron pipe. Usually mounted on a bench for pumping cider, cream, oil, etc. Details as to hot liquids, valves, etc., as above, apply to this construction.

Fig. 3093. Special design for pumping from barrels. Sleeve will fit bungholes from 1 1/8 to 2 1/8 inches diameter, in Nos. 1 and 2, and 2 3/8 to 3 1/8 inches in No. 3 size. Sharpened end of suction pipe is forced into the wood of barrel, holding the pump firmly. Has no valves. Will lift and force 60 feet.

Fig. 3092

No.	Capacity per Minute 100 Revolutions Gallons	Suction Hose Inches	Discharges		Diameter Balance Wheel Inches	Iron List Price	Bronze Case and Cams List Price	Bronze List Price
			End of Spout Hose Ins.	Top of Spout Hose Ins.				
1	10	1 1/4	1	1	13 1/2	18.00	56.00	68.85
2	13	1 1/4	1	1	13 1/2	20.25	62.75	75.60
3	17	1 1/2	1 1/4	1 1/4	13 1/2	20.80	69.85	86.40
4	27	1 1/2	1 1/2	1 1/2	20	36.40	98.00	130.15
5	36	2	2	2	20	43.25	113.35	156.50

Fig. 3093. Barrel Pump

No.	Capacity per Minute 100 Revolutions Gallons	Suction Pipe Inches	Discharges		Approximate Weight Pounds	Iron List Price	Bronze Case and Cams List Price	Bronze List Price
			End of Spout Hose Inch	Top of Spout Hose Inch				
1	10	1	1	1	41	17.00	52.65	66.15
2	13	1	1	1	46	19.25	59.40	72.90
3	17	1 1/4	1 1/4	1 1/4	53	19.75	66.15	82.35

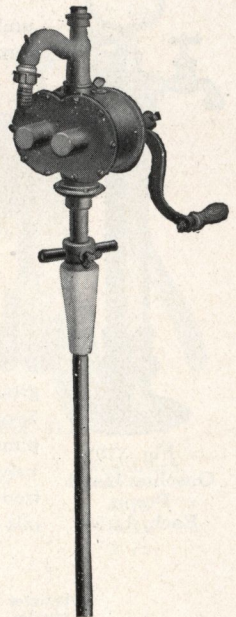


Fig. 3093
Rotary Barrel Pump

Hand and Power Boiler Feed Pump

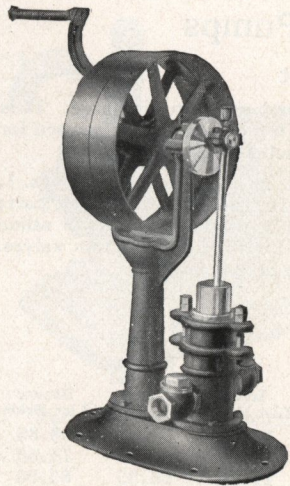


Fig. 3100
Boiler Feed Pump

Fig. 3100 is an improved design hand and power boiler feed pump with tight and loose pulleys for power and an iron crank for hand operation. The pulleys are supported by a strong column, bolted to the base.

The crank is connected to the plunger rod by a crank disc.

The plunger is outside packed.

The check valves are bronze.

Number	Diameter Cylinder Inches	Stroke Inches	Capacity Per Minute 60 Strokes Gallons	Suction Pipe Inches	Discharge Pipe Inches	Pressure Pounds	Pulleys Inches	Approx. Weight Pounds	Price
0	2	3	2.45	1	1	60	16 x 3	156	\$65.00
2	2½	3	3.82	1	1	45	16 x 3	162	70.00
4	3	3	5.51	1¼	1¼	30	16 x 3	168	75.00

Overhead Geared Countershaft

For Operating Pumps or Cylinders—Fig. 3101

The face plate can be fitted to the main shaft in place of the pinion, making a direct stroke countershaft. Pitman is furnished for pump connection. It is adapted for driving any of our smaller pumps, working heads and cylinders by belt from line shaft, or with gas, oil or steam engine.

Stroke, Inches	Geared	Pulleys	Approximate Weight, Pounds	Each
2 to 10	3½ to 1	12 x 3	95	18.75

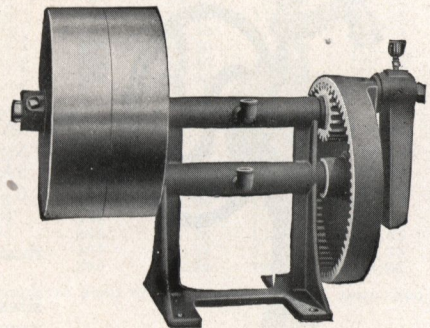


Fig. 3101. Geared Countershaft

Gasoline Hand Pump

Fig. 3102 is an inexpensive, well-made hand pump for pumping gasoline from underground storage tanks. Plunger can be locked with padlock to prevent tampering with pump or theft of gasoline.

Cylinder is brass, 2½-inch diameter, stroke is 12 inch and discharge connection ¾-inch hose. Suction is 1-inch pipe. Capacity per stroke, .255 gallon.

Plunger rod is brass cased and operates through a brass, hemp-packed screw gland. The base is in two parts and is clamped to the suction piece by two bolts. When plunger is locked the gasoline flows back to storage tank. The padlock is extra.

"Safety" Special Lift and Force Oil Pump

Fig. 3103 Lift and Force Oil Pump can be mounted upon barrel or tank, and if desired can be arranged to pump oil from tank in basement or from underground storage, thereby insuring absolute safety from explosions and evaporation. Spout is reversible, so that liquid may be discharged at either right or left of pump. Change is made by removing lever and turning spout either way. Trip valve is provided so that cylinder may be drained; spout is inside threaded for iron pipe. Widely used in garages, stores and factories where gasoline and other oils are used.

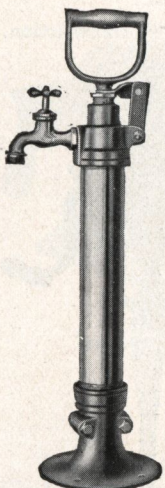


Fig. 3102
Gasoline Hand
Pump
Each, 12.50

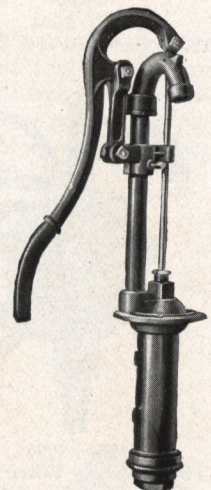


Fig. 3103
Safety Special Lift
and Force Oil
Pump

Lift and Force Oil Pump, Fig. 3103

Number	Diameter Cylinder Inches	Stroke Inches	Capacity Per Stroke Gallon	Suction Pipe Inches	Lift and Force Feet	Approximate Weight Pounds	Price
1	2¼	6	.10	1	25	26	\$9.40
4	3	6	.18	1¼	25	30	10.30

Pitcher Spout Pumps

For Suction Lift of 25 Feet

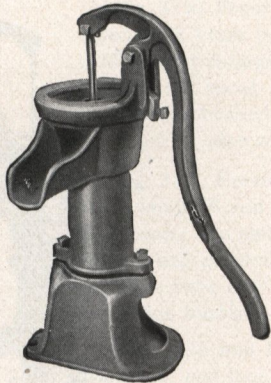


Fig. 3110

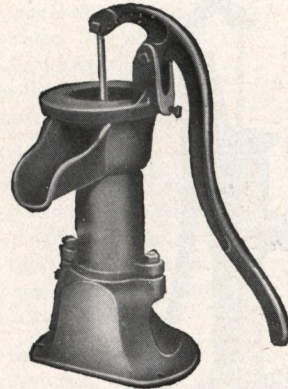


Fig. 3111

Fig. 3110 Standard Closed Top Pitcher Spout Pump. A low priced, substantial pump for use over cisterns or shallow wells. The bearer top is secured to the cylinder with a set screw. A nut tapped for iron pipe is supplied on the threaded hub beneath the base. If lead pipe is to be used, a soldering tube that fits inside this nut can be furnished at an increased cost of 0.15 on the list. Can also be fitted with brass suction tube and valve seat and nut threaded for iron pipe, or with brass suction tube and valve seat with tube for lead pipe at extra cost, viz: For iron pipe, add 0.50 for Nos. 1, 2 and 3; 1.00 for Nos. 4 and 5 and 2.00 for No. 6. For lead pipe add to list 0.75 for Nos. 1, 2 and 3; 1.50 for Nos. 4 and 5, and 3.00 for No. 6.

Fig. 3111. Exactly the same as Fig. 3110, except that it has an open bearer top.

To prevent freezing, trip the suction valves of these pumps by lifting the lever as high as it will go.

Fig. 3110 and Fig. 3111 Pitcher Pumps

Number	Diameter Cylinder Inches	Stroke Inches	Capacity Per Stroke Gallon	Suction Pipe Inches	Approximate Weight in Pounds	Iron, Price	Brass-Lined Price
1	2½	4	.09	1	22	2.10	4.00
2	3	4	.12	1¼	23	2.35	4.50
3	3½	4	.17	1½	26	2.60	5.00
4	4	4	.22	1½	30	3.10	5.65
5	4½	5	.34	2	42	4.75	7.80
6	5	5	.43	2½	61	8.50	14.00



Fig. 3112

Fig. 3112 Pitcher Pump has a round spout, which is often preferred, as the water cannot slop, and the ear on the spout provides a support for the bucket. The lever can be turned to operate in any desired direction. Regularly fitted for iron pipe, but can be fitted for lead pipe, or with brass suction tube and valve seat as described above, at extra price.

Fig. 3113 is a high grade Pitcher Spout Pump with the cylinder made of seamless drawn brass, heavily nicked, making a very handsome pump. The top can be turned at any angle and the lever operated from any position. Plunger and rod are galvanized. Regularly fitted for iron pipe, but can be fitted for lead pipe at extra price.

To prevent freezing, operate as above.

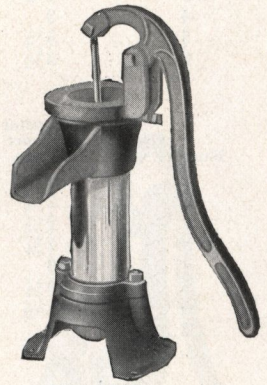


Fig. 3113

Fig. 3112 Pitcher Spout Pump

Number	Diameter Cylinder Inches	Stroke Inches	Capacity Per Stroke Gallon	Suction Pipe Inches	Weight Pounds	Iron, Price	Brass-Lined Price
1	2½	4	.09	1	26	2.90	4.75
2	3	4	.12	1¼	27	3.20	5.25
3	3½	4	.17	1½	33	3.55	5.75

Fig. 3113 Pitcher Spout Pump

Number	Diameter Cylinder Inches	Stroke Inches	Capacity Per Stroke Gallon	Suction Pipe Inches	Weight Pounds	Price
2	3	4	.12	1¼	18	Nickel-plated Cylinder \$5.75

Cistern Suction Pumps

For Suction Lift of 25 Feet

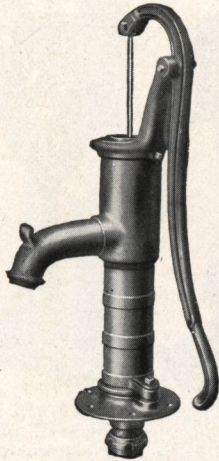


Fig. 3120

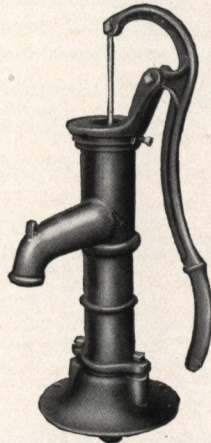


Fig. 3121

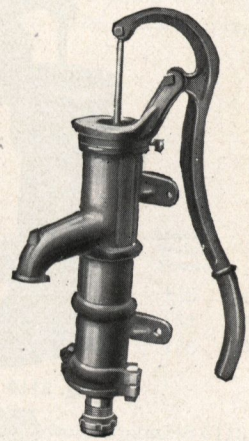


Fig. 3122

Fig. 3120 is neat, light in weight, but strong and serviceable. Made with revolving cylinder and closed top. Cylinder is secured to base with two iron clamps. By loosening bolts holding these clamps, the spout can be turned in any direction. Bearer top is also adjustable and lever can be operated from any point. The suction valve is leather. Regularly fitted with nut threaded for iron pipe.

Fig. 3121 is a popular style of cistern pump with cylinder bolted to a higher base. The bearer top is adjustable, and lever may be operated in any position. Plunger has a brass valve. Regularly fitted with nut threaded for iron pipe.

Fig. 3122 is fitted with brackets instead of base, so that it can be bolted to wall where convenient. Regularly furnished with nut threaded for iron pipe.

To prevent freezing, these pumps can be drained by raising the lever as far up as it will go. This trips the suction valve, allowing the water to flow out of the cylinder.

Fig. 3120 Cistern Suction Pump

Number	Diameter Cylinder Inches	Stroke Inches	Capacity Per Stroke Gallon	Suction Fitted for Pipe, Inches	Approximate Weight Pounds	Iron, Price	Brass-Lined Price
0	2	3 $\frac{3}{4}$	.042	1	16	3.10	5.00
1	2 $\frac{1}{4}$	5	.072	1	20	3.50	5.25
2	2 $\frac{1}{2}$	5	.088	1 $\frac{1}{4}$	21	3.90	5.75
3	2 $\frac{3}{4}$	6 $\frac{3}{4}$	.145	1 $\frac{1}{4}$	25	4.40	6.50
4	3	6 $\frac{3}{4}$	.171	1 $\frac{1}{2}$	32	4.80	7.00
5	3 $\frac{1}{4}$	7 $\frac{1}{4}$	.217	1 $\frac{1}{2}$	44	5.70	8.50
6	3 $\frac{1}{2}$	7 $\frac{1}{4}$	.250	1 $\frac{1}{2}$	54	7.00	10.00

Fig. 3121 Cistern Suction Pump

Number	Diameter Cylinder Inches	Stroke Inches	Capacity Per Stroke Gallon	Suction Fitted for Pipe, Inches	Approximate Weight Pounds	Iron, Price	Brass-Lined Price
0	2	5	.07	1	25	3.10	5.00
1	2 $\frac{1}{4}$	6	.10	1	27	3.50	5.25
2	2 $\frac{1}{2}$	6	.13	1 $\frac{1}{4}$	31	3.90	5.75
3	2 $\frac{3}{4}$	6	.15	1 $\frac{1}{4}$	32	4.40	6.50
4	3	6	.18	1 $\frac{1}{4}$	38	4.80	7.00
5	3 $\frac{1}{4}$	6	.22	1 $\frac{1}{2}$	40	5.70	8.50
6	3 $\frac{1}{2}$	6	.25	1 $\frac{1}{2}$	44	7.00	10.00
8	4	6	.33	2	53	8.75	13.50

Fig. 3122 Cistern Suction Pump

Number	Diameter Cylinder Inches	Stroke Inches	Capacity Per Stroke Gallon	Suction Fitted for Pipe, Inches	Approximate Weight Pounds	Iron, Price	Brass-Lined Price
0	2	5	.07	1	26	3.10	5.00
1	2 $\frac{1}{4}$	6	.10	1	27	3.50	5.25
2	2 $\frac{1}{2}$	6	.13	1 $\frac{1}{4}$	30	3.90	5.75
3	2 $\frac{3}{4}$	6	.15	1 $\frac{1}{4}$	35	4.40	6.50
4	3	6	.18	1 $\frac{1}{4}$	37	4.80	7.00
5	3 $\frac{1}{4}$	6	.22	1 $\frac{1}{2}$	41	5.70	8.50
6	3 $\frac{1}{2}$	6	.25	1 $\frac{1}{2}$	43	7.00	10.00

Any of these pumps can be fitted for lead pipe at an increase of 0.15 in the list price.

They can also be furnished with brass suction tube and valve seat with nut threaded for iron pipe, or with tube for lead pipe at small additional cost.

Star Force Pump Standards

Lift and Force 25 to 150 Feet

Fig. 3130 Force Pump Standard is built with revolving tight top fitted with brass packing gland and air chamber tube. Air chamber is formed by enlarging the stock above the spout. An outlet is provided back of the spout for $1\frac{1}{4}$ -inch pipe. Standard is tapped 2-inch, but is regularly bushed for $1\frac{1}{4}$ -inch pipe near the spout. Can be bushed for $1\frac{1}{2}$ -inch pipe when so ordered.

Fig. 3131 Force Pump Standard has an improved one-piece forged steel windmill rod and crosshead, making a very strong connection. The bearer top and air chamber tube are of new design and large and substantial construction. Built with revolving top, fitted with air chamber tube and brass packing gland; also with removable windmill rod guide bushing. Pipe connections same as described above.

Fig. 3130 and Fig. 3131 Standards require cylinders as shown on page 320, and foot valves and strainers are recommended. For these an extra charge is made.

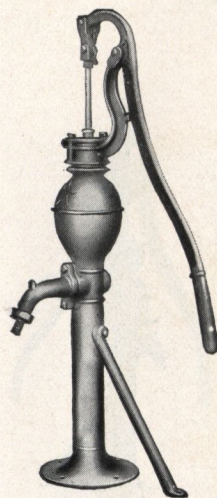


Fig. 3130
Force Pump
Standard

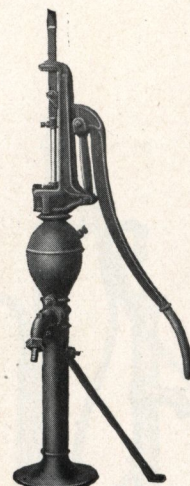


Fig. 3131
Force Pump
Standard

Force Pump Standard, Fig. 3130

No.	Stroke	Suction, Inches	Weight Pounds	Steel Well Rod Inch	Each
1 With Plain Spout.....	6	$1\frac{1}{4}$	57	$\frac{3}{8}$	8.25
1 With Cock Spout.....	6	$1\frac{1}{4}$	60	$\frac{3}{8}$	10.00

In Fig. 3130 the $1\frac{1}{4}$ -inch Standard is fitted for $\frac{3}{8}$ -inch rod; $1\frac{1}{2}$ and 2-inch Standards for $\frac{7}{16}$ -inch well rod. This Standard is especially adapted for garden, yard and stable use.

Force Pump Standard, Fig. 3131

No.	Stroke, inches	Suction Pipe Inches	Discharges	Steel Well Rod Inch	Approx. Weight Pounds	Price
Fig. 3131. Plain Spout	6-in. Hand, 10-in. Mill	2	$1\frac{1}{4}$ -in. Pipe and $\frac{3}{4}$ -in. Hose	$\frac{7}{16}$	76	8.75
Fig. 3131. Plain Spout	Adj. 6, 8, and 10-in.	2	$1\frac{1}{4}$ -in. Pipe and $\frac{3}{4}$ -in. Hose	$\frac{7}{16}$	86	8.75
Fig. 3131A. Cock Spout	6-in. Hand, 10-in. Mill	2	$1\frac{1}{4}$ -in. Pipe and $\frac{3}{4}$ -in. Hose	$\frac{7}{16}$	80	10.65
Fig. 3131A. Cock Spout	Adj. 6, 8, and 10-in.	2	$1\frac{1}{4}$ -in. Pipe and $\frac{3}{4}$ -in. Hose	$\frac{7}{16}$	90	10.65

In Fig. 3131 Plain and Cock Spout standards the well rod furnished is threaded $\frac{5}{8}$ -inch. On standards bushed for $1\frac{1}{4}$ -inch this rod is fitted for $\frac{3}{8}$ well rod. Standards bushed for $1\frac{1}{2}$ and those tapped for 2-inch pipe are fitted for $\frac{7}{16}$ -inch well rod. Standards tapped 2-inch can also be fitted for 1-inch wood rod.

Combination House Force Pumps

Lift and Force 50 to 75 Feet

Fig. 3132 is mounted on a base and fitted with check valve on the discharge. Lever can be operated at any angle desired. Plunger rod is brass cased and operates through a brass packing gland. Pump is regularly fitted for iron pipe, but can be fitted for lead pipe at extra price.

Fig. 3133 same as above, but fitted with brackets for securing to wall or plank. Cylinder and lever can be adjusted in the bracket to operate in any position. Fitted as above.

No.	Diameter Cylinder Inches	Stroke Inches	Capacity Per Stroke Gallon	Suction Inches	Discharge Inches	Approx. Weight Pounds	Iron Price of Either	Brass Lined Price of Either
0	2	5	.06	1	1	37	\$9.00	\$11.50
2	$2\frac{1}{2}$	5	.10	$1\frac{1}{4}$	$1\frac{1}{4}$	40	9.50	12.00
4	3	6	.18	$1\frac{1}{4}$	$1\frac{1}{4}$	54	11.00	13.50
6	$3\frac{1}{2}$	6	.24	$1\frac{1}{2}$	$1\frac{1}{2}$	62	17.00	20.50
8	4	6	.32	2	2	65	18.00	23.00

Sizes 0, 2 and 4 are adapted for a lift and force of 75 feet. Sizes 6 and 8, 50 feet from source of supply to point of discharge—pumps not more than 25 feet above water.

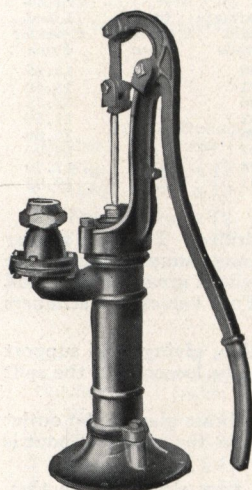


Fig. 3132
With Base

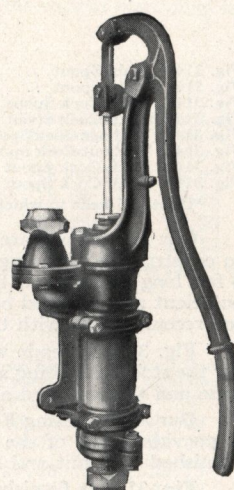
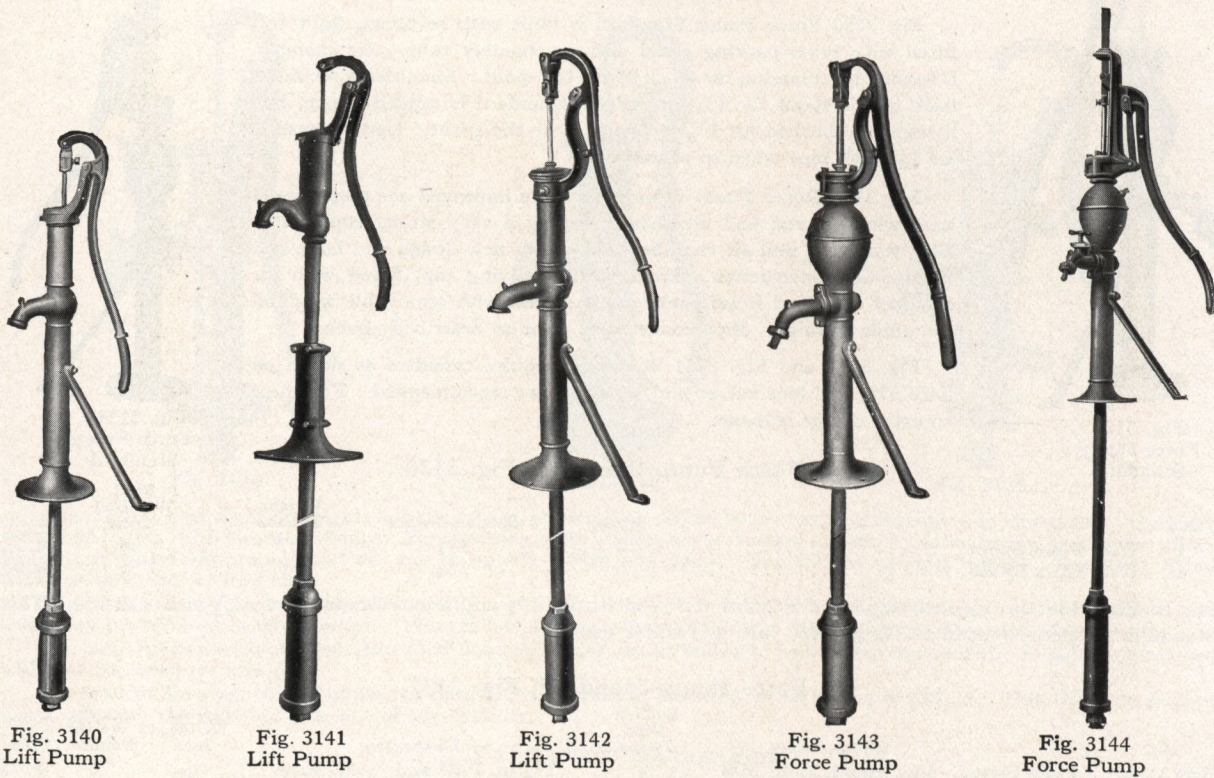


Fig. 3133
With Bracket

“Star” Lift and Force Pumps
For Wells 30 Feet Deep



“Star” Anti-Freezing Lift Pumps—For Wells 30 Feet Deep

		Number	Cylinder Inches	Stroke Inches	Capacity Per Stroke Gallon	Suction Pipe Inches	Approx. Weight Pounds	Iron Cylinder Price	Brass- Lined Cylinder Price
Fig. 3140.	Regular Pattern.....	4	3 x 10	6	.18	1 1/4	60	6.85	8.85
Fig. 3140.	Extra Heavy.....	4	3 x 10	6	.18	1 1/4	66	8.10	10.00
Fig. 3141.	Regular Pattern.....	4	3 x 10	5	.15	1 1/4	59	6.85	8.85
Fig. 3142.	Regular Pattern.....	4	3 x 10	6	.18	1 1/4	65	7.85	9.85

“Star” Anti-Freezing Force Pumps—For Wells 30 Feet Deep

	Number	Cylinder Inches	Stroke Inches	Capacity Per Stroke Gallon	Suction Pipe Inches	Discharge		*Lift and Force Feet	Approximate Weight Pounds	Iron Cylinder Price	Brass- Lined Cylinder Price
Fig. 3143.	Plain Spout.....	4	3 x 10	6	.18	1 1/4	3/4	60	80	11.85	13.85
Fig. 3143.	Plain Spout.....	6	3 1/2 x 10	6	.25	1 1/2	3/4	50	91	13.10	15.60
Fig. 3143.	With Cock Spout... 4	3 x 10	6	.18	1 1/4	1 1/4	3/4	60	86	13.75	15.75
Fig. 3143.	With Cock Spout... 6	3 1/2 x 10	6	.25	1 1/2	1 1/4	3/4	50	92	15.00	17.50
Fig. 3144.	Without Cock Spout 4	3 x 14	6	.30	1 1/4	1 1/4	3/4	60	106	14.35	15.80
Fig. 3144.	Without Cock Spout 6	3 1/2 x 14	Hand	.41	1 1/2	1 1/4	3/4	50	107	16.00	18.20
Fig. 3144.	With Cock Spout... 4	3 x 14	10	.30	1 1/4	1 1/4	3/4	60	108	16.25	17.70
Fig. 3144.	With Cock Spout... 6	3 1/2 x 14	Mill	.41	1 1/2	1 1/4	3/4	50	111	17.75	19.95

*Depth of wells to which pumps may be adapted by placing lower cylinders within 15 or 20 feet of the water.

Our Lift Pumps are anti-freezing and designed for outdoor cisterns and wells, either dug or drilled. They are similar in construction, differing only in size and weight of standard. Standard is tapped for iron pipe, and pumps as listed are 4 feet long from base to bottom of cylinder. They are adapted for wells about 30 feet deep. For wells of greater depth, add sufficient pipe and rod between base and cylinder to place cylinder within 15 feet of the water. Foot valves and strainers are recommended with these pumps.

Fig. 3141 is made with an iron pipe stock and adjustable base. The latter is made extra high, giving rigid support for the stock and doing away with the cast iron brace. A favorite with well drillers, as the bolts can be loosened in the split base and the standard adjusted to any height above the platform.

Our Anti-freezing Force Pumps are built with revolving top, fitted with air chamber tube and brass gland. An outlet is provided back of the spout, tapped for iron pipe connection. The stock is tapped for pipe near the spout. Spout is furnished with nut and hose tube. Set length, etc., same as above described.

Fig. 3144 is furnished with a one-piece forged steel wind-mill rod and crosshead, making a very strong connection. Bearer top and tube are of a new design, large and substantial in construction.

Foot valves and strainers are recommended for these pumps.

Empire Double-Acting Force Pumps

Lift and Force 75 to 100 Feet

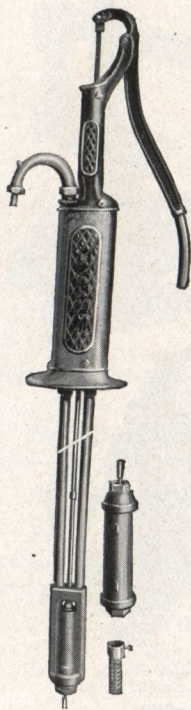


Fig. 3150



Fig. 3151



Fig. 3152
Windmill Top



Fig. 3153
Windmill Top

These pumps are adapted for shallow wells, 75 to 100 feet. The upper cylinder is brass-lined and has differential plunger. Stuffing boxes and glands are dispensed with, thus avoiding undue friction. The pumps are furnished complete with brass-lined or brass body lower cylinder, with Universal Bronze Valve and Seat and Universal Bushing. No. 2 will go inside of 4 $\frac{3}{4}$, and No. 4 inside of 5-inch casing. Shipped arranged for shallow wells with lower cylinder screwed to upper cylinder unless otherwise ordered. Set length from base to bottom of lower cylinder is 65 inches, and adapted for wells 30 feet deep. For deeper wells, unscrew lower cylinder, attach top cap to lower cylinder, place Universal Bushing in bottom of upper cylinder and connect the two cylinders with sufficient pipe and rod to place lower cylinder within 15 feet of the water—preferably submerged.

Fig. 3151 and Fig. 3153 are fitted with 1-inch three-way cock for underground discharge. This cock is controlled by the rod which projects through the base of the standard, as shown in illustrations.

Empire Double-acting Force Pumps, Fig. 3150 and Fig. 3151

Number	Lower Cylinder Inches	Stroke Inches	Capacity Per Stroke Gallon	Suction Pipe Inches	Approximate Weight Pounds	Well Rod Inch	*Lift and Force Feet	Brass-Lined Cylinder Price	Brass Body Cylinder Price
2 \ Fig.	2 $\frac{1}{2}$ x 12	5	.11	1 $\frac{1}{4}$	98	$\frac{3}{8}$	100	18.00	19.25
4 \ 3150	3 x 12	5	.15	1 $\frac{1}{4}$	105	$\frac{3}{8}$	75	18.00	19.25
2 \ Fig.	2 $\frac{1}{2}$ x 12	5	.11	1 $\frac{1}{4}$	100	$\frac{3}{8}$	100	21.25	22.50
4 \ 3151	3 x 12	5	.15	1 $\frac{1}{4}$	107	$\frac{3}{8}$	75	21.25	22.50

*Depth of wells to which pumps may be adapted by lowering cylinders to within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

Empire Double-acting Force Pumps, Fig. 3152 and Fig. 3153

Number	Lower Cylinder Inches	Stroke Inches	Capacity Per Stroke Gallon	Suction Inches	*Lift and Force Feet	Approximate Weight Pounds	Brass-Lined Cylinder Price	Brass Body Cylinder Price
2 \ Fig.	2 $\frac{1}{2}$ x 12	6	.13	1 $\frac{1}{4}$	100	106	18.75	20.00
4 \ 3152	3 x 12	6	.18	1 $\frac{1}{4}$	75	111	18.75	20.00
2 \ Fig.	2 $\frac{1}{2}$ x 12	6	.13	1 $\frac{1}{4}$	100	110	22.50	23.75
4 \ 3153	3 x 12	6	.18	1 $\frac{1}{4}$	75	115	22.50	23.75

*Depth of wells to which pumps may be adapted by lowering cylinders to within 15 or 20 feet of water, or total lift and force from supply to point of delivery.

“Challenge” Double-Acting Force Pump

Lift and Force 100 to 150 Feet

Adapted for service in factories, on wharves, aboard ships as deck pumps, and for pumping to elevated storage tanks for home water supply and fire protection.

Piston rod is brass-cased and operates through a brass packing gland. Valves are brass on brass seats, and cylinders are either brass-lined or all brass as ordered. Discharge is located above the suction, making it impossible for air pockets to form.

Suction and discharge are regularly fitted for iron pipe, but can be fitted for hose when so ordered, at extra price.

Fig. 3160. With Single Lever

Number	Diam. Cyl. Inches	Stroke Inches	Capacity Per Rev. Gallons	Suction Inches	Discharge Inches	*Lift and Force Feet	Approx. Weight Pounds	Brass-Lined Cylinder Price	Brass Cylinder Price	†Brass Price
2	2½	4½	.19	1¼	1	150	89	30.00	82.00	112.00
4	3	4½	.28	1¼	1	150	90	31.00	82.00	112.00
8	4	4½	.49	1½	1¼	100	105	34.00	90.00	135.00
12	5	5¼	.89	2	1½	100	190	45.00	135.00	225.00
16	6	5¼	1.28	2½	2	100	229	56.00	180.00	275.00

*Total Lift and Force from supply to point of delivery. Pump not more than 25 feet above water.

†Brass Pumps are made entirely of brass, except levers, links and bolts.

Fig. 3160. With Double Lever

Number	Diam. Cyl. Inches	Stroke Inches	Capacity Per Rev. Gallons	Suction Inches	Discharge Inches	*Lift and Force Feet	Approx. Weight Pounds	Brass-Lined Cylinder Price	Brass Cylinder Price	†Brass Price
8	4	4½	.49	1½	1¼	125	130	40.00	100.00	150.00
12	5	5¼	.89	2	1½	125	215	50.00	145.00	230.00
16	6	5¼	1.28	2½	2	125	260	60.00	190.00	290.00

*Total Lift and Force from supply to point of delivery. Pump not more than 25 feet above water.

†Brass Pumps are made entirely of brass, except levers, links and bolts.

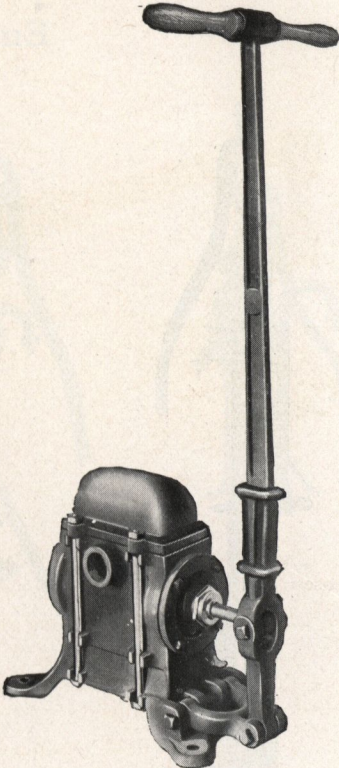


Fig. 3160 Challenge Double-Acting Force Pump with Single Lever

“New Alert” Double-Acting Force Pump

Lift and Force 50 to 75 Feet—Fig. 3161

A moderate priced double-acting force pump, adapted for raising water to upper floors and attic tanks, also for general service pumping as in mills, factories and stores. Fulcrum at base gives powerful leverage; air chamber is large, insuring even flow from the discharge. Sectional view shows grouping of valves in box above cylinder, rendering them easily accessible by loosening bolts at side of valve box.

Regularly furnished with leather valves, but can be fitted with brass valves and seats as shown in small cut at following extra list: No. 2, 4.75; No. 4, 5.75; No. 8, 3.50. Fitted with lead pipe or hose instead of iron pipe as listed, add to list: No. 2 and 4, 3.00; No. 8, 3.50.

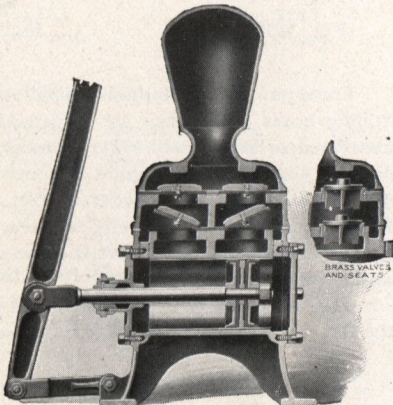


Fig. 3161. Sectional View

“New Alert” Air and Water Force Pump

Lift and Force 75 Feet

Same as Fig. 3161, except that it is provided with an air valve so that it will pump both water and air for pneumatic Tank Water Supply Systems. When air is needed in the tank, the air valve is opened and the pump will then supply both air and water. Made in two sizes, regularly fitted with leather valves, but can be fitted with brass valves and seats, and for lead pipe or hose at extra lists as above.

“New Alert”—Fig. 3161

Number	Diameter Cylinder Inches	Stroke Inches	Capacity Per Rev. Gallon	Suction Pipe Inches	Discharge Pipe Inches	*Lift and Force Feet	Approx. Weight Pounds	Iron Price	Brass-Lined Price
2	2½	5	.21	1¼	1	75	65	16.00	18.50
4	3	5	.31	1¼	1	75	66	18.00	21.00
8	4	5	.54	1½	1¼	50	91	24.00	28.00

Air and Water Pumps

Number	Diameter Cylinder Inches	Stroke Inches	Capacity Per Rev. Gallon	Suction Pipe Inches	Discharge Pipe Inches	*Lift and Force Feet	Approx. Weight Pounds	Iron Price	Brass-Lined Price
2	2½	5	.21	1¼	1	75	65	20.00	22.50
4	3	5	.31	1¼	1	75	66	22.50	25.00

*Total Lift and Force from supply to point of delivery. Pump not more than 15 feet above water.

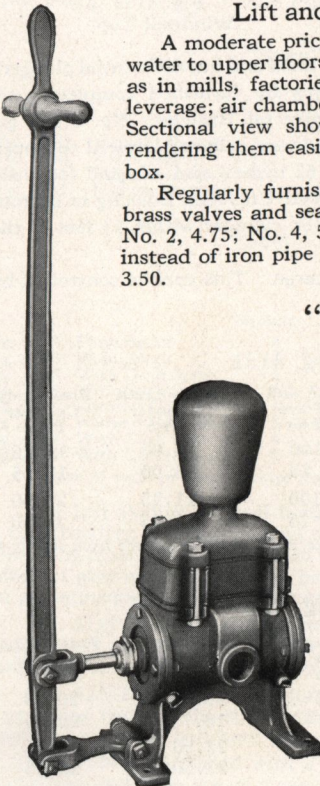


Fig. 3161. “New Alert”

Hydraulic Test Pumps

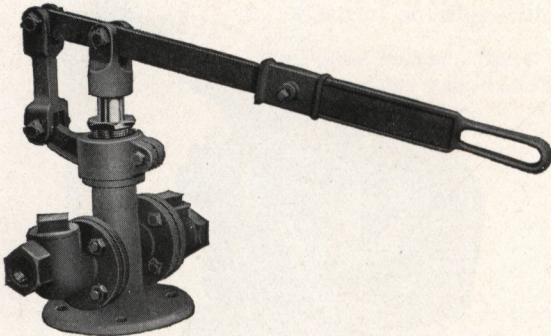


Fig. 3170
Hydraulic Test Pump

Fig. 3170 Test Pump is of compact design, and lever can be operated from any position. Suction and discharge valve cases are flanged and bolted to cylinder. The valves, valve seats and caps are brass.

The pump should be placed on a level with the water to be pumped or but little above it.

Fig. 3171 Gun Metal Test Pump with cast iron tank for any pressure up to 1,000 pounds per square inch. Outfit is portable, and weighs about 50 pounds. Tank holds about 2 gallons of water. The apparatus to be tested should first be filled with water and the pump then applied.

Price includes tank, pump and check valve. Gauge and fittings extra at market prices.

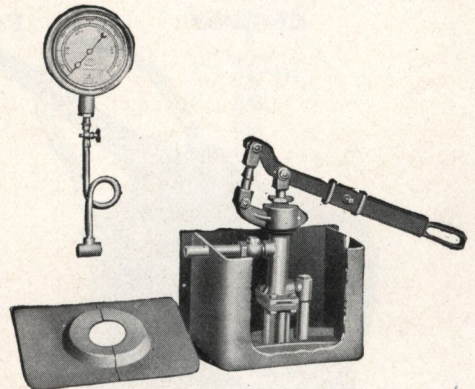


Fig. 3171
Hydraulic Test Pump and Tank

Fig. 3170. Hydraulic Test Pump

Number	Diameter Piston Inches	Stroke Inches	Suction and Discharge Pipe Inch	Working Pressure Pounds	Approximate Weight Pounds	Price
0	$\frac{3}{4}$	5	1	700	31	25.00
1	1	5	1	550	32	25.50
2	$1\frac{1}{4}$	5	1	400	36	26.25
3	$1\frac{1}{2}$	5	1	200	39	27.00

Fig. 3171. Hydraulic Test Pump and Tank

Diameter Piston Inch	Discharge Pipe Inch	Working Pressure Pounds	Approximate Weight Pounds	Price
$\frac{7}{8}$	$\frac{1}{2}$	1000	51	56.25

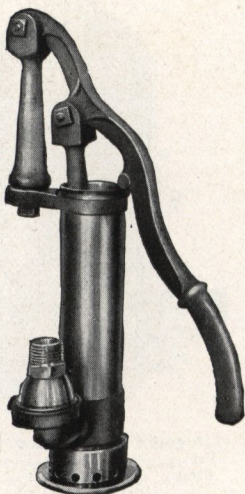


Fig. 3172
Plumbers' Force Pump

Fig. 3172. Plumbers' Force Pump for removing obstructions in pipes, etc. Cylinder and all working parts are brass. Plunger is leather packed. Lever is long and a high pressure can be easily produced. Discharge is furnished with a brass-cased check valve and fitted for $\frac{3}{4}$ -inch hose coupling. In operating this pump, a hose is connected to pipes to be cleared and the pump is set in a vessel of water.

Fig. 3173. A hand-operated air pressure pump with compound lever, $5\frac{1}{2}$ -inch stroke and a $\frac{3}{16}$ -inch hose discharge, but can be fitted for $\frac{1}{4}$ -inch pipe if desired. For working pressure to 50 pounds.

This pump is strictly high class in every respect and is designed for hard usage. Weight about 16 pounds.

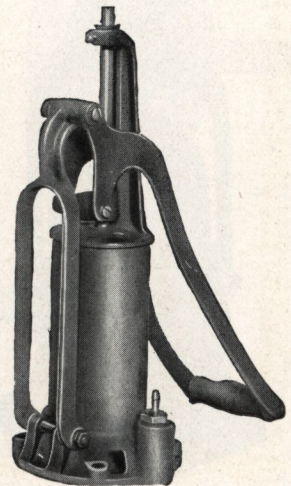


Fig. 3173
Air Pressure Pump

Fig. 3172
Each, 11.25

Fig. 3173
Each, 12.50

Diaphragm Suction Pumps

For Suction Lift of 25 Feet

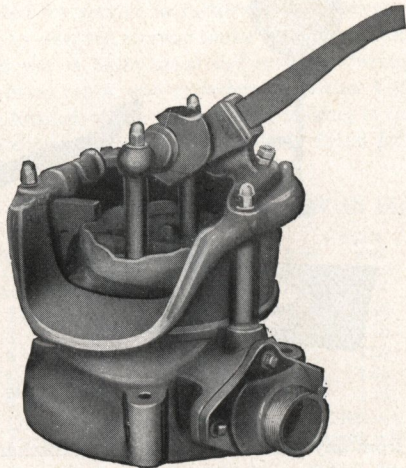


Fig. 3180. Side Suction

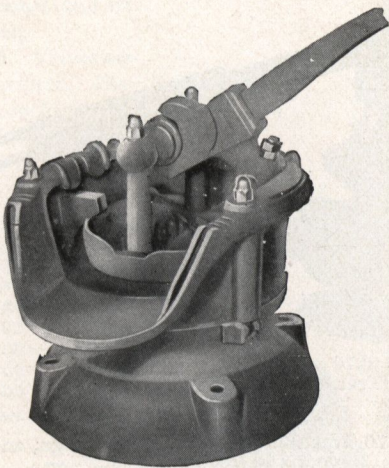


Fig. 3181. Bottom Suction

In Fig. 3180 the Suction Hose Attachment is at the side. It is cut for iron pipe thread, which is the thread used on commercial hose couplings. Suction can be cut to special hose gauge if desired.

Diaphragm is of best quality rubber, and guaranteed to stand hard usage. Suction valve is of metal, rubber faced and easily removable. It rests on an inclined seat and therefore offers the least obstruction to the passage of the matter handled. The waterways are large, permitting an easy flow of fluid.

The lever is wrought iron and reversible. Can be used vertically or horizontally from either side or the back of the pump. Largely used by contractors and builders in pumping out excavations.

Fig. 3181. Same as above, except that the suction pipe connection is made at the bottom instead of the side. Widely used for bilge pumping, but is also suitable for same service as Fig. 3180.

Number	Stroke Inches	Suction Iron Pipe Inches	Approximate Capacity Per Hour Gallons	Fig. 3181 With Bottom Suction		Fig. 3180 With Side Suction	
				Approximate Weight Pounds	Price	Approximate Weight Pounds	Price
2	3	2½	1800	115	20.60	127	23.75
3	3	3	3500	170	26.85	178	30.60
4	4	4	6000	256	45.60	266	50.00

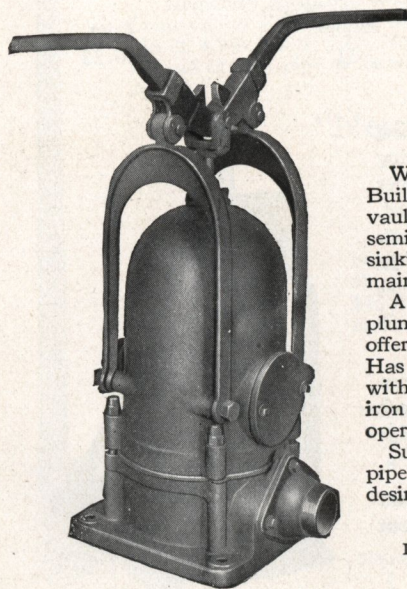


Fig. 3182
Odorless Diaphragm Force Pump

Odorless Diaphragm
Force Pump

Lift and Force 30 Feet

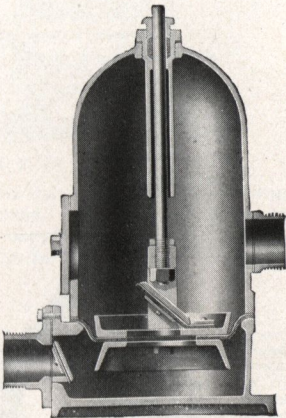
Working parts entirely enclosed by an air chamber. Built especially for pumping out sewers, cesspools, vaults, and for handling any disagreeable fluid or semi-fluid in a sanitary manner. Also widely used for sinking piling and fish net stakes and for filling water mains for test purposes.

A rubber diaphragm with special valve acts as a plunger. The inclined rubber-faced suction valve offers the least obstruction to the passage of matter. Has convenient handhole for getting at interior without removing air chamber. Levers are wrought iron and reversible. Stroke is short, and pump operates easily.

Suction and discharge furnished regularly for iron pipe thread, but can be furnished with hose gauge if desired.

Diameter Diaphragm Inches	Stroke Inches	Capacity Per Stroke Gallons	Suction Pipe Inches	Discharge Pipe Inches	*Lift and Force Feet	Approximate Weight Pounds	Price
13	3	1.72	3	3	30	257	75.00

*Total Lift and Force from source of supply to point of delivery. Pump not more than 25 feet above water.



Sectional View

Suction and Force Pumps

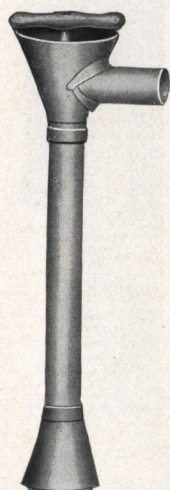


Fig. 3190
Galvanized Hand
Suction Pump

Heavy Galvanized Hand
Suction or Bilge Pumps

One-piece Pumps. Barrel made in one piece, double seamed and soldered; strong and serviceable.

Diameter Inches	Gauge	Per Foot
2	26	.60
3	24	.70
4	24	.80
5	24	1.20

No pump charged less than 5 feet. Pumps longer than 12 feet made to order.

Little Giant
Lift and Force Pump

The Patent Lift and Force Cup gives the pump a powerful reciprocating force. A non-collapsible rubber cup with bifurcated edges enables the operator to make a joint over four-inch screen drains, and fills a four-inch pipe or opening. An adjustable washer is furnished for odd shapes and sizes where the lift and force cup will not fit.

There is no ordinary plumbing fixture to which the Little Giant is not adapted, and it is recommended for the removal of the most obstinate waste pipe obstructions.

Pump, Complete \$8.00

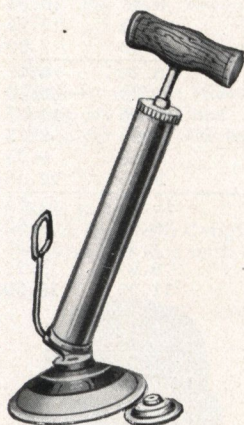


Fig. 3192
Little Giant Pump

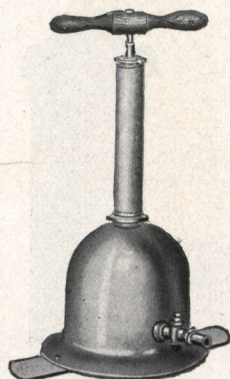


Fig. 3194
Gas Main or Clearing Pump
A serviceable pump made of copper, with brass air pump and metallic valves
Each 24.00

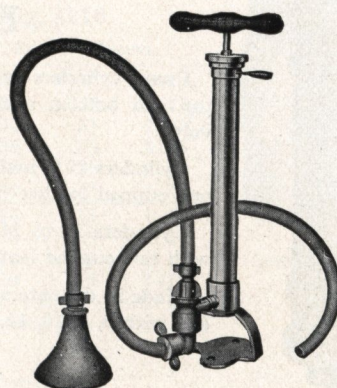


Fig. 3191. Suction and Force Pump

For cleaning waste pipes from sinks, wash bowls, tanks, etc. Easily operated. Entirely of brass. Height, 22 inches. Diameter, $1\frac{1}{2}$ inches. Inlet and outlet for $\frac{3}{4}$ -inch hose. Cut shows pump with 5-foot sections of $\frac{3}{4}$ -inch hose and a 4-inch Force Cup.

Price, Pump only 11.00
Price, Complete with Hose and Force Cup 17.50

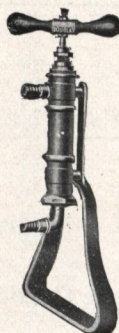


Fig. 3193
Plumbers'
Force Pump

Fig. 3193 is a Plumbers' Brass Force Pump for cleaning or testing pipes by either suction or force. A conical tip with thread the entire length adapts it for any size up to $1\frac{1}{4}$ inch, and is furnished with each pump. Piston is 2-inch diameter, stroke 5-inch, suction and discharge $\frac{3}{4}$ inch hose.

Each 15.00

Rubber Elastic Force Cups

For cleaning the discharge pipes of wash-bowls, bathtubs, stationary washtubs, etc., when they become partially or entirely stopped.

No. 1, 3-inch Diameter, per dozen	\$2.70
No. 2, $3\frac{3}{4}$ -inch Diameter, per dozen	3.00
No. 3, $4\frac{1}{2}$ -inch Diameter, per dozen	3.50

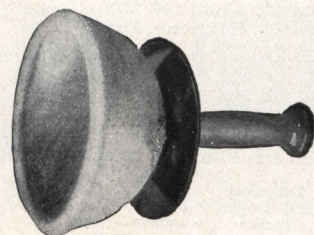


Fig. 3195. Rubber Force Cup

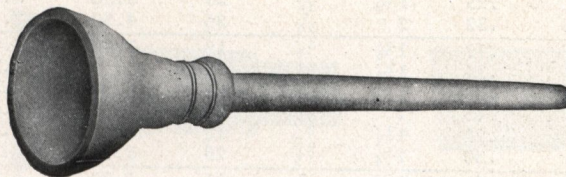


Fig. 3196. Plumbers' Friend

For forcing stoppages out of closets, bowls, sinks, tubs, urinals and soil pipes.

No. 4, 6-inch Cup, per dozen	12.00
No. 5, 4-inch Cup, per dozen	6.00



Fig. 3200
Outside View

Pump Cylinders or Working
Barrels

Pump cylinders or working barrels with outside top and bottom attachments and leather suction valve.

Cylinders 10½ inches long have AA Plunger with one cupped leather packing.

Cylinders 12 to 24 inches long have BB Plunger with two cupped leather packings.

Made in diameters ranging from 2½ to 6 inches, and with 6, 8, 10, 12, 14, 16, 18 and 20-inch stroke.

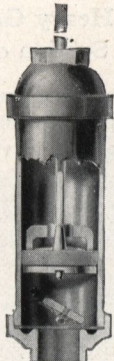


Fig. 3200
With AA Plunger

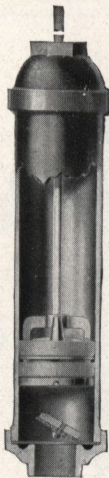


Fig. 3200
With BB Plunger

Pump Cylinders, Fig. 3200

Diameter and Length Inches	Stroke Inches	Capacity Per Stroke Gallon	Size Pipe Inches	Well Rod Inch	Approximate Weight Pounds	Brass-Lined Brass Cage and Valve Plunger		Brass Body All Brass Plunger	All Brass
						Iron			
2½ x 10½	6	.13	1¼	3⁄8	10½	2.20	4.35	4.80	7.25
3 x 10½	6	.18	1¼	3⁄8	14	2.50	5.00	5.50	8.00
3½ x 10½	6	.25	1½	7⁄16	16	3.50	5.65	6.45	10.00
4 x 10½	6	.32	2	7⁄16	22½	4.50	7.50	8.70	12.75
2½ x 12	8	.17	1¼	3⁄8	12	3.00	4.80	5.50	7.50
3 x 12	8	.24	1¼	3⁄8	15½	3.50	5.30	6.20	8.25
3½ x 12	8	.33	1½	7⁄16	17	4.50	6.30	7.70	10.50
4 x 12	8	.44	2	7⁄16	22	5.75	7.95	10.00	13.25
2½ x 14	10	.21	1¼	3⁄8	13	3.25	5.20	5.90	8.75
3 x 14	10	.30	1¼	3⁄8	16	3.75	5.70	6.60	9.75
3½ x 14	10	.41	1½	7⁄16	18	5.00	6.85	8.25	12.50
4 x 14	10	.54	2	7⁄16	25	6.50	8.85	10.65	12.75
2½ x 16	12	.25	1¼	3⁄8	15	3.50	5.70	6.60	9.50
3 x 16	12	.37	1¼	3⁄8	17½	4.00	6.30	7.15	10.25
3½ x 16	12	.50	1½	7⁄16	19	5.60	7.55	8.95	13.25
4 x 16	12	.65	2	7⁄16	28	7.25	9.80	11.50	16.50

Extreme Outside Diameter, Fig. 3200

Size, inches	2½	3	3½	4
Outside Diameter, Iron	3⅞	4⅞	4⅞	5¼
Outside Diameter, Brass	3⅞	3⅞	4⅞	4⅞

Pump Cylinders, Fig. 3203

With bolted outside top and bottom attachments and leather suction valves. Made with AA and BB Plungers, as above described.

Diameter and Length Inches	Stroke Inches	Capacity Per Stroke Gallon	Size Pipe Inches	Well Rod Inch	Approx. Weight Pounds	Brass-Lined Brass Cage and Valve Plunger		Brass Body All Brass Plunger	All Brass
						Iron			
2½ x 10½	6	.13	1¼	3⁄8	13½	2.20	4.35	4.50	6.50
3 x 10½	6	.18	1¼	3⁄8	16	2.50	5.00	5.50	8.00
3½ x 10½	6	.25	1½	7⁄16	20	3.50	5.65	6.45	10.00
4 x 10½	6	.32	2	7⁄16	26	4.50	7.50	8.70	12.75
2½ x 12	8	.17	1¼	3⁄8	15	3.00	4.80	5.50	7.50
3 x 12	8	.24	1¼	3⁄8	17	3.50	5.30	6.20	8.25
3½ x 12	8	.33	1½	7⁄16	22	4.50	6.30	7.70	10.50
4 x 12	8	.44	2	7⁄16	26	5.75	8.00	10.00	13.25
2½ x 14	10	.21	1¼	3⁄8	16	3.25	5.20	5.90	8.75
3 x 14	10	.30	1¼	3⁄8	20	3.75	5.70	6.60	9.75
3½ x 14	10	.41	1½	7⁄16	24	5.00	6.85	8.25	12.50
4 x 14	10	.54	2	7⁄16	27½	6.50	8.85	10.65	12.75
2½ x 16	12	.26	1¼	3⁄8	17½	3.50	5.70	6.60	9.50
3 x 16	12	.37	1¼	3⁄8	21½	4.00	6.30	7.15	10.25
3½ x 16	12	.50	1½	7⁄16	26	5.65	7.60	8.95	13.25
4 x 16	12	.65	2	7⁄16	29½	7.25	9.80	11.50	16.50

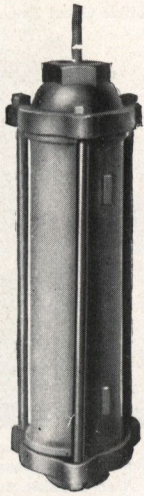


Fig. 3203
Bolted Pattern

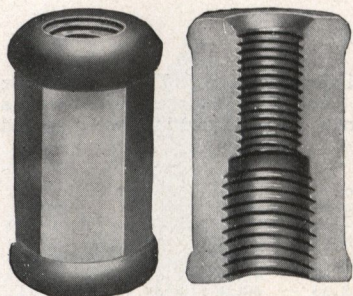


Fig. 3210. Iron Rod Coupling

Accessories for Driven Wells

Iron Rod Couplings, Fig. 3210

Size Rods Inches	Threads Per Inch U. S. Standard	Number in a Pound	Price Per Pound		
			Plain	Galv'd	Brass
$\frac{3}{8}$	16	6	.30	.35	1.25
$\frac{3}{8} \times \frac{7}{16}$	16 x 14	5	.30	.35	1.25
$\frac{7}{16}$	14	5	.30	.35	1.25
$\frac{1}{2}$	13	5	.30	.35	1.25
$\frac{5}{8}$	11	3	.30	.35	1.25
$\frac{5}{8} \times \frac{3}{8}$	11 x 1	26 $\frac{1}{2}$	.30	.35	1.25
$\frac{5}{8} \times \frac{7}{16}$	11 x 14	21 $\frac{1}{2}$	.30	.35	1.25
$\frac{3}{4}$	10	11 $\frac{1}{2}$	.30	.35	1.25
1	8	8	.30	.35	1.25

Fig. 3211. Pipe Rod Couplings, with $\frac{3}{8}$ -inch pipe thread—3 to the pound. Per pound, plain, .35; Galvanized .40.

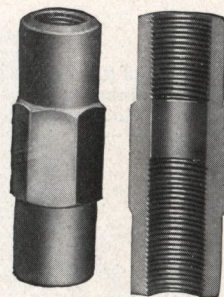
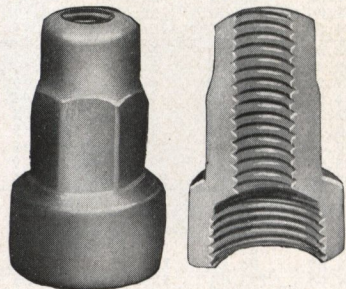
Fig. 3211
Pipe Rod Coupling

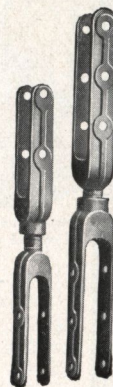
Fig. 3212. Reducer Coupling

Fig 3212. Reducer Couplings

Size	Number in a Pound	Price Per Pound	
		Plain	Galv'd
$\frac{3}{8}$ Pipe x $\frac{3}{8}$ -inch Rod	5	.50	.55
$\frac{3}{8}$ Pipe x $\frac{7}{16}$ -inch Rod	5	.50	.55
$\frac{3}{8}$ Pipe x $\frac{1}{2}$ -inch Rod	6	.50	.55
$\frac{1}{2}$ Pipe x $\frac{3}{8}$ -inch Rod	6	.50	.55
$\frac{1}{2}$ Pipe x $\frac{7}{16}$ -inch Rod	6	.50	.55
$\frac{1}{2}$ Pipe x $\frac{1}{2}$ -inch Rod	7	.50	.55

Wood Rod Couplings, Fig. 3213

Size.....	1 x 1 $\frac{1}{8}$	1 $\frac{1}{4}$ x 1 $\frac{3}{8}$
Number of Bolt Holes.....	2	3
Price per Pair, Plain.....	.30	.40
Price per Pair, Galvanized.....	.40	.45

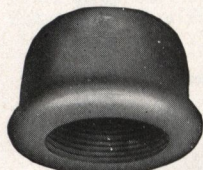
Fig. 3213
Wood Rod Coupling

Plain and Galvanized Rod with Couplings

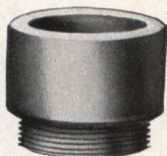
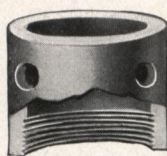
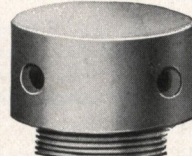
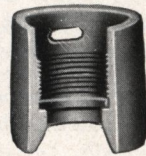
Size, inches.....	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1
Plain Rod with Couplings, per foot.....	.05	.06	.07	.13	.20	.25	.30
Galvanized Rod with Couplings, per foot.....	.08	.10	.11	.15	.25	.30	.40

Malleable Iron Drive Caps

Size.....	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$	3	4
Each.....	.30	.35	.75	1.25	1.50	1.75

Fig. 3214
Drive Cap

Drive Heads and Shoes

Fig. 3215
Male Hollow Drive HeadFig. 3216
Female Hollow Drive HeadFig. 3217
Male Solid Drive HeadFig. 3218
Steel Drive Shoe

Size.....	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$	3	4	4 $\frac{1}{2}$
Figs. 3215, 3216, 3217, each.....	2.30	2.60	4.00	5.00	6.00	7.00
Fig. 3218 Steel Drive Shoes, each.....	2.30	2.30	3.50	4.00	5.00	....

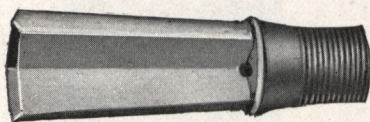


Fig. 3219. Hydraulic X Bit

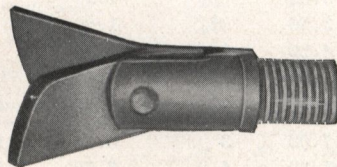


Fig. 3219A. Expansion Bit

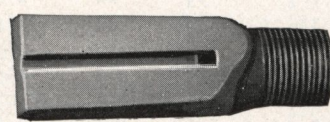


Fig. 3219B. Hydraulic Chopping Jet Bit

Size, inches.....	2	2	2 $\frac{1}{2}$	3	3	4	5	6
For Wash Rods, inches.....	$\frac{3}{4}$	1	1	1	1 $\frac{1}{4}$	1 $\frac{1}{4}$	1 $\frac{1}{4}$	1 $\frac{1}{4}$
Fig. 3219, each.....	6.00	6.20	6.80	....	....	....	....	....
Fig. 3219A, each.....	....	10.00	....	14.00	....	18.00	....	....
Fig. 3219B, each.....	3.00	3.50	4.00	....	7.50	9.00	10.00	12.00

Brass Jacket Drive Well Points

Made of galvanized iron pipe with elliptical holes punched of uniform size and equal distance apart. They contain the greatest number of holes possible to punch in a pipe and retain sufficient strength for driving. They are covered with a brass wire cloth which is protected by a heavy perforated brass jacket. The drive point is iron, swaged into the pipe and riveted.

Trade No.	Diameter Pipe, In.	Length of Pipe, In.	Length of Jacket, In.	Number of Holes	Approximate Weight Pounds	No. 60 Gauze Per Dozen	No. 70 Gauze Per Dozen	No. 80 Gauze Per Dozen	No. 90 Gauze Per Dozen	No. 100 Gauze Per Dozen
90	1 1/4	24	18	100	5	20.25	24.75	29.25	33.75	45.00
94	1 1/4	30	24	130	7	25.85	31.00	36.00	42.20	56.25
98	1 1/4	36	30	165	8	31.50	37.10	42.75	50.60	67.50
100	1 1/4	42	36	200	9	37.10	43.30	49.50	59.00	78.75
102	1 1/4	48	42	240	10	42.75	49.50	56.25	67.50	90.00
106	1 1/4	54	48	260	10	48.40	55.70	63.00	76.00	101.25
110	1 1/4	60	54	290	12	54.00	61.85	69.75	84.50	112.50
112	1 1/4	66	60	320	13	59.60	68.00	76.50	92.80	123.75
114	1 1/4	72	66	350	14	65.25	74.25	83.25	101.25	135.00
136	1 1/2	24	18	120	7	27.00	32.00	36.60	43.90	52.90
140	1 1/2	30	24	162	8	33.75	39.40	45.00	54.00	66.40
144	1 1/2	36	30	198	9	40.50	47.25	53.50	64.10	80.00
146	1 1/2	42	36	240	10	47.25	54.60	61.85	74.25	93.40
148	1 1/2	48	42	276	12	54.00	62.50	70.30	84.40	105.75
150	1 1/2	54	48	312	14	60.75	69.75	78.75	94.50	114.75
152	1 1/2	60	54	348	15	67.50	77.60	87.20	104.60	128.25
154	1 1/2	66	60	384	16	74.25	85.00	95.60	114.75	141.75
156	1 1/2	72	66	420	18	81.00	92.85	104.00	124.90	155.25
160	2	24	18	144	8	42.20	47.85	52.85	61.90	73.10
164	2	30	24	208	11	50.60	56.85	63.00	74.25	90.00
168	2	36	30	264	13	59.00	66.40	73.10	86.60	106.90
170	2	42	36	288	14	67.50	75.40	83.25	99.00	123.75
172	2	48	42	336	16	76.00	85.00	93.40	111.40	140.60
174	2	54	48	384	18	84.40	94.00	103.50	123.75	157.50
176	2	60	54	432	19	92.80	103.50	113.60	136.10	174.40
178	2	66	60	480	20	101.25	112.50	123.75	148.50	191.25
180	2	72	66	528	22	109.70	122.00	133.85	160.85	208.00
184	2 1/2	36	30	300	22	101.25	115.30	129.40	146.25	168.75
188	2 1/2	48	42	360	24	129.40	149.00	168.75	191.25	225.00
196	2 1/2	72	66	480	26	185.60	216.60	247.50	281.25	337.50
200	3	36	30	300	33	135.00	154.70	174.40	191.25	230.60
204	3	48	42	420	33	168.75	194.00	219.40	241.85	292.50
212	3	72	66	660	48	236.25	272.80	308.40	343.10	416.25
220	4	72	60	600	60	354.40	391.00	427.50	472.50	562.50



Fig. 3220
Drive Well Point

Well Rods and Couplings

Connecting Parts for Single-Acting Deep Well Pumps

Fig. 3221. Wood Well Rods are made of the best material obtainable. The prices include all necessary couplings attached, and are per length up to and including 18-foot lengths.

Fig. 3222. Special Forged Well Rod Couplings complete and ready to be attached to well rods. The table includes all sizes used with the deep-well pumping apparatus described in this catalogue.

Size Wood Well Rods Inches	Couplings etc., have Connecting Threads Inches	Number Threads to the Inch	Inside Diameter of Deep Well Cylinder Inches	Well Rod and Coupling Fig. 3221 *Price per Length	Approximate Weight Pounds per Foot	Coupling Fig. 3222 Price per Pair	Approximate Weight Pounds Per Pair
1 1/8	5/8	12	1 3/4	3.00	1 1/2	1.25	2
1 3/8	5/8	12	2 1/4	3.50	3/4	1.50	3
1 5/8	7/8	10	2 3/4	4.50	1 1/4	1.75	6
2	1	10	3 1/4	8.50	1 1/2	3.25	9
2 1/4	1 1/8	8	3 3/4	13.50	2 1/4	4.25	13
2 1/2	1 1/4	8	4 1/4	17.00	3	6.25	18
3	1 1/2	8	4 3/4	21.00	4	8.00	24
3 1/2	1 1/2	8	5 3/4	24.00	5 1/2	11.00	28
4	1 3/4	8	6 3/4	125.00	8 3/4	70.00	60
5	2	8	7 3/4	170.00	15 1/2	95.00	100
5 1/2	2 1/4	As ordered	8 3/4	185.00	...	125.00	120

*Up to and including 18-foot lengths.

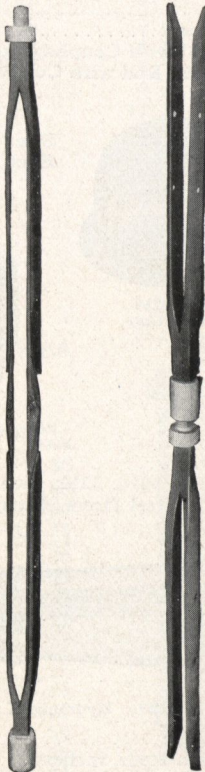


Fig. 3221. Wood Well Rod and Coupling



Fig. 3222 Forged Well Rod Coupling

Vertical Air Compressors

Principal Features

Quiet operation.
 Enclosed and dust-proof.
 Self-oiling—splash system.
 Glass side covers for inspection.
 Easily accessible.
 Economical power consumption.
 Interchangeable parts.
 Removable Bronze Valves.
 Genuine Babbitt crank-pin bearing.
 Removable bronze piston ring bearing.
 Removable bronze valves.
 Hammered steel crankshaft.
 Cylinder and head water cooled.
 Tested to 350 pounds pressure.
 Filled and given two coats of paint.
 One coat finest coach varnish.
 Thoroughly protected for shipping.
 Guaranteed workmanship and material.

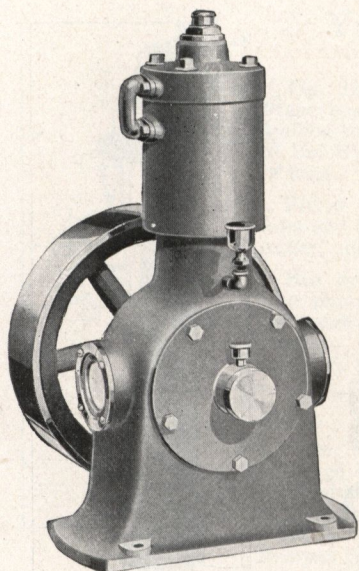


Fig. 3230. Standard Compressor, Water Cooled Type—Tight Pulley Only

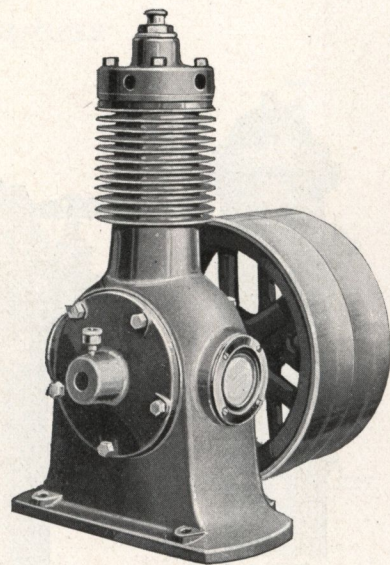


Fig. 3231. Standard Compressor, Air Cooled. With Tight and Loose Pulley

Water and Air-Cooled Compressors

Water Cooled, for Working Pressures 100 to 250 Pounds; Air Cooled, 75 to 150 Pounds

	3 x 3	4 x 4	5 x 5	6 x 6
Size Cylinder.....	300-600	250-500	200-400	200-300
Revolutions per Minute.....	3-8	7-15	11-23	20-30
Cubic Feet per Minute.....	.0123	.029	.057	.0975
Cubic Feet per Revolution.....	1-2	2-4	3-7	5-10
Horse-power.....	12 x 3	16 x 4	20 x 5	24 x 6
Size Pulleys.....	$\frac{3}{4}$	$\frac{3}{4}$	1	$1\frac{1}{4}$
Size Suction.....	$\frac{1}{2}$	$\frac{1}{2}$	1	$1\frac{1}{4}$
Size Discharge.....	200	300	500	800
Approximate Shipping Weight, pounds.....	110.00	160.00	210.00	270.00
Price with Tight Pulley.....	5.00	12.00	17.00	24.00
Extra for Loose Pulley.....	3.50	4.50	5.00	5.50
Extra for Anchor Rods.....				

These Compressors should not run less than the minimum R. P. M. given in table.

Air Receivers

All receivers are tested to 165 pounds hydrostatic pressure and then proven air tight for a working pressure of 110 pounds. Pressure gauges and cocks, pop or lever safety valves and drip cocks are not included in list prices. Quotations for these trimmings will be made on application, or supplied with the receivers as an extra at market prices.

All seams on receivers 14 to 24 inches diameter inclusive are single riveted. Receivers 30 inches and larger, longitudinal seams are lapped and double riveted, girth seams single riveted; heads are machine flanged and dished to radius equal to diameter of receiver, thus insuring maximum strength.

Diameter, inches.....	14	16	18	20	20	20	20	24
Length, feet.....	5	5	6	4	5	6	8	5
Thickness Shell, inch.....	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$
Thickness Heads, inch.....	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$
Tappings for Safety Valve, inch.....	1	1	1	1	1	1	1	1
Tappings, Inlet and Discharge, inches.....	2-1 $\frac{1}{2}$	2-1 $\frac{1}{2}$	2-1 $\frac{1}{2}$	2-1 $\frac{1}{2}$	2-2	2-2	2-2	2-2
Weight, pounds.....	215	250	315	270	335	355	445	390
Each.....	50.00	53.00	59.00	53.50	57.00	60.00	67.00	61.00
Diameter, inches.....	24	30	30	30	36	36	36	42
Length, feet.....	6	6	8	10	6	8	10	10
Thickness Shell, inch.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$
Thickness Heads, inch.....	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$
Size Safety Valve, inches.....	1	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	2-5
Size Inlet and Discharge, ins.....	2-2	2-3	2-3	2-3	2-4	2-4	2-4	2-5
Weight, pounds.....	440	840	1050	1245	1055	1395	1540	1480
Each.....	64.00	108.00	125.00	146.00	124.00	157.00	175.00	185.00

Sizes 14-inch by 5 feet to 30-inch by 10 feet, with hand-hole. Larger sizes with manhole.

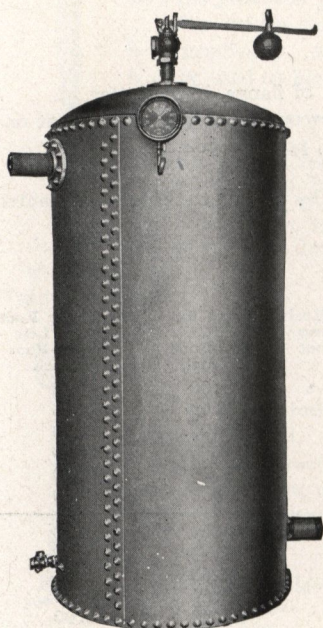


Fig. 3232. Air Receiver

Compression Fire Hydrants
Anti-Freezing

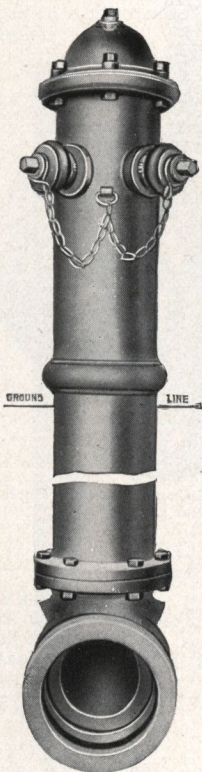


Fig. 3240
Compression Fire Hydrant

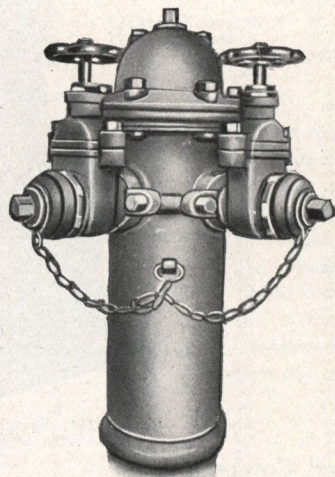


Fig. 3241
View of top of Hydrant, showing 2½-inch independent Hose Gate Valves bolted on nozzles.

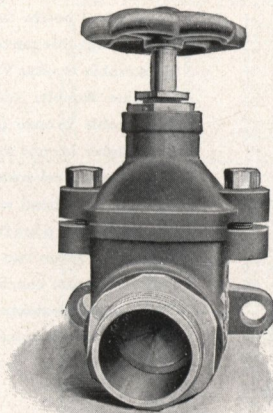


Fig. 3242
2½-inch independent Hose Gate Valve, permitting the use of as many or as few of the hose nozzles as may be desired without shutting off the main inlet valve.
List price, each..... 6.00

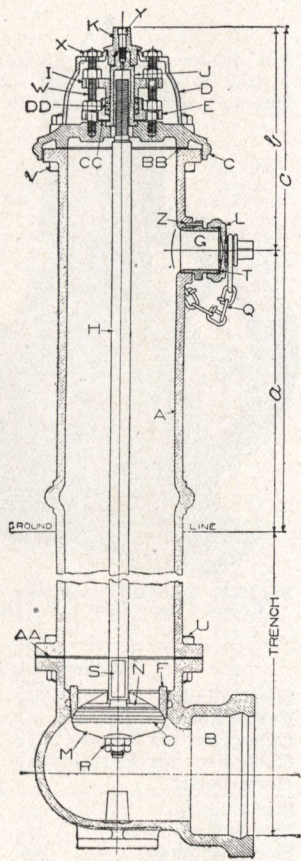


Fig. 3240
Sectional View

In Ordering

To avoid unnecessary correspondence and delay, the following particulars should be given:

1. Number and size of Nozzles.
2. Length from pavement to bottom of connection, or depth of trench.
3. Size of connection to main.
4. Whether Hydrant is to have bell, screw or flange connection—stating diameter of flange, if the latter.
5. Size and shape of operating nut at top. (Nozzle caps generally have nuts corresponding to top nut, so that one wrench operates all.) We furnish regularly pentagon in shape measuring 1½ inches flat, point to point.
6. Size of inlet valve.

Unless otherwise specified, all Hydrants are furnished without frost cases, and to open by turning to the left. If wanted otherwise, orders must so specify.

Compression Fire Hydrants, Fig. 3240

Size of Main Connection Inches	Size of Inlet Valve, Inches	Number and Style of Nozzles		For 5-Foot Trench, Each	Deduct for Each 6 Inches Less Than 5-Foot Trench	Extra for Frost Case for 5-Foot Trench	Deduct for Each 6 Inches Less Than 5-Foot Trench
		2½-inch Hose	Steamer				
4 or 6	4¼	One	....	31.50	.75	5.00	.50
4 or 6	4¼	Two	....	33.50	.75	5.00	.50
4 or 6	4¼	One	One	35.50	.75	5.00	.50
4 or 6	4¼	Two	One	37.50	.75	5.00	.50
6 or 8	5¼	Two	....	40.50	.85	6.50	.70
6 or 8	5¼	Three	....	42.50	.85	6.50	.70
6 or 8	5¼	One	One	42.50	.85	6.50	.70
6 or 8	5¼	Two	One	44.50	.85	6.50	.70
6 or 8	6¼	Three	....	53.25	1.00	7.50	.90
6 or 8	6¼	Four	....	55.25	1.00	7.50	.90
6 or 8	6¼	Two	One	55.25	1.00	7.50	.90
6 or 8	6¼	Three	One	57.25	1.00	7.50	.90

Yard Hydrants and Street Washers

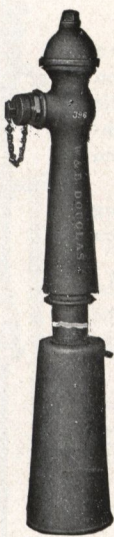


Fig. 3250
Medium Hydrant

Fig. 3250 Medium Fire Hydrant has the brass screw controlling the piston at the bottom of the Hydrant, out of the way of frost.

Fitted for 2-inch iron pipe inlet and 2-inch New York Hose outlet, unless otherwise ordered.

Has bottom check valve so that plunger can be withdrawn for repairs. Made in following lengths: 1, 1½, 2, 2½, 3, 3½, 4, 4½, 5, 6, 7, and 8 feet.

Any length up to 4 feet, each 25.00.

Note: Fig. 3250 is designed for large lawns, golf links, and fire protection on private estates, etc., where a standard fire hydrant is too large and a yard hydrant too small.

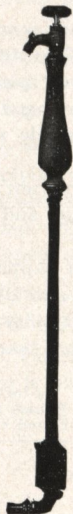


Fig. 3251
Hydrant

Fig. 3251 is our "Economic" style of hydrant.

The piston and screw operating this hydrant are in the lower cylinder out of the way of the frost.

Fig. 3252 is the same as Fig. 3251, less the Jacket.



Fig. 3252
Hydrant

Fig. 3251 and Fig. 3252

To go in ground, feet.....	1½	2	3	3½	4	4½	5	5½	6
Fig. 3251. ¾-inch Pipe and Hose.....	8.00	8.00	8.00	8.25	8.50	8.75	9.00	9.25	9.50
Fig. 3251. 1-inch Pipe and Hose.....	10.00	10.00	10.00	10.25	10.50	10.75	11.00	11.25	11.50
Fig. 3252. ¾-inch Pipe and Hose.....	7.00	7.00	7.00	7.25	7.50	7.75	8.00	8.25	8.50
Fig. 3252. 1-inch Pipe and Hose.....	9.00	9.00	9.00	9.25	9.50	9.75	10.00	10.25	10.50

Yard Hydrants



Fig. 3253
Yard Hydrant

Fig. 3253 Yard Hydrant has movable waterway, expansion packing and bottom check valve, so that plunger can be withdrawn for repairing.

The check valve, piston, screw and spout are of cast brass. The waterway is large and clear and the provision for waste to avoid freezing is ample.

Fig. 3254 is similar in construction to Fig. 3253, but is self-closing. When closed the lever is perpendicular. A catch on the side holds the hydrant open when desired. When this hydrant is to be used on higher pressures than 50 pounds, orders should so state.

Fig. 3253 and Fig. 3254

To go in ground, feet.....	3	3½	4	4½	5	6
Fig. 3253. ¾-in. Iron or Lead Pipe and Hose..	10.00	10.25	10.50	11.00	11.50	12.50
Fig. 3253. 1-in. Iron or Lead Pipe and Hose...	12.50	12.75	13.00	13.50	14.00	15.00
Fig. 3254. ¾-in. Iron or Lead Pipe and Hose..	11.50	11.75	12.00	.....	13.00	14.00
Fig. 3254. 1-in. Iron or Lead Pipe and Hose...	14.00	14.25	14.50	.....	15.50	16.50



Fig. 3254
Yard Hydrant

Street Washers



Fig. 3255
Street Washer

Fig. 3255 Street Washer is similar in construction to Fig. 3251, but adapted to set flush with surface of ground.

Fig. 3256 Street Washer has lower parts like Fig. 3253 shown above, with movable waterway, lower check valve, etc. The construction throughout is heavy and durable.

Fig. 3255 and Fig. 3256

To go in ground, feet.....	1½	2	2½	3	3½	4	4½	5	6	8
Fig. 3255. ¾-in.....	7.00	7.00	7.00	7.00	7.25	7.50	7.75	8.00	8.50	9.50
Fig. 3255. 1-in.....	9.00	9.00	9.00	9.00	9.25	9.50	9.75	10.00	10.50	11.50
Fig. 3256. ¾-in.....	8.00	8.00	8.00	8.00	8.25	8.50	9.00	9.50	10.50	12.50
Fig. 3256. 1-in.....	10.50	10.50	10.50	10.50	10.75	11.00	11.50	12.00	13.00	15.00



Fig. 3256
Street Washer

Hydrants and Street Washers

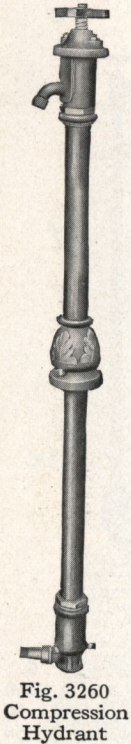
Fig. 3260 "Sun" Compression Hydrant possesses all the best features contributing to a reliable anti-freezing two-pipe hydrant. The stock and outer casing is formed of large iron pipe, inside of which is the smaller or "wet" pipe, conveying the water to spout. Base is adjustable. Plunger is actuated by wheel handle and brass screw. Plunger can be withdrawn through the hydrant, and automatic stop valve prevents water flowing when plunger is withdrawn.

Fig. 3261 "No Shock" Self-closing Hydrant is similar to Fig. 3260. The strong spring in the top of the hydrant seats the plunger and shuts off the water, unless it is held open by the lever or latch.

Both hydrants described have inlet supplied with brass swivel nut and brass tube cut to receive 3/4-inch iron pipe coupling and also suitable for lead pipe connection. The use of a short piece of lead pipe gives flexibility when frost heaves the ground.

Spout or discharge is fitted for 3/4-inch hose coupling.

Length to Set in Ground Inches	Length Over All of Hydrant Inches	Fig. 3260. 3/4-inch Hydrant Inlet Fitted for 3/4-inch Iron and Lead Pipe. Spout Fitted 3/4-inch Hose		Fig. 3261. 3/4-inch Hydrant Inlet Fitted for 3/4-in. Iron and Lead Pipe. Spout Fitted 3/4-in. Hose	
		Approximate Weight, Pounds	Price	Approximate Weight, Pounds	Price
18	45	23	6.35	23	6.60
24	50	25	6.35	25	6.60
30	57	27	6.85	26	7.10
36	63	29	6.85	28	7.10
42	69	31	7.35	29	7.60
48	75	33	7.35	31	7.60
60	87	37	7.85	34	8.10
72	99	41	8.35	37	8.60



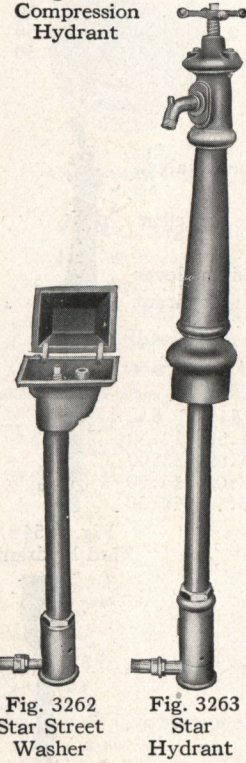
Star Hydrant and Street Washer

The superior features of these hydrants and washers are so familiar as to make an extended description unnecessary.

They are anti-freezing and can be opened or closed instantly by means of the double threaded brass screw which actuates the valve below. The valve can be withdrawn through the top for inspection without digging.

They have a brass swivel or coupling nut. The brass tube for the service pipe connection is ground to joint with the valve case elbow. A short piece of lead pipe between coupling and service pipe is recommended to prevent fracture when frost heaves the ground. An iron turnkey goes with each street washer.

Length to Set in the Ground Inches	Fig. 3263 3/4-Inch Hydrant Inlet Fitted for 3/4-inch Iron and Lead Pipe Spout for 3/4-inch Hose		Fig. 3262 3/4-Inch Washer Inlet Fitted for 3/4-inch Iron and Lead Pipe Spout for 3/4-inch Hose		Fig. 3263 1-Inch Hydrant Inlet Fitted for 1-inch Iron and Lead Pipe Spout for 1-inch Hose		Fig. 3262 1-Inch Washer Inlet Fitted for 1-inch Iron and Lead Pipe Spout for 1-inch Hose	
	Approx. Weight Pounds	Price	Approx. Weight Pounds	Price	Approx. Weight Pounds	Price	Approx. Weight Pounds	Price
18	34	7.60	19	6.10	44	10.00	22	8.60
24	36	7.60	21	6.10	46	10.00	24	8.60
30	37	8.10	23	6.60	48	10.60	26	9.25
36	39	8.10	24	6.60	50	10.60	28	9.25
42	40	8.60	26	7.10	52	11.25	30	9.85
48	42	8.60	27	7.10	54	11.25	32	9.85
54	43	9.10	29	7.60	56	11.85	34	10.50
60	45	9.10	30	7.60	58	11.85	36	10.50
72	48	9.60	33	8.10	62	12.50	40	11.10



Lewis Compression Hydrants (not illustrated)

Length in Ground, feet.....	2	2 1/2	3	3 1/2	4	4 1/2	5	6
3/4-inch Inlet, 3/4-inch Hose, Lead or Iron Pipe.....	9.00	9.75	10.00	10.75	11.00	11.75	12.00	13.00
1-inch Inlet, 1-inch Hose, Lead or Iron Pipe.....	14.50	15.25	15.50	16.25	16.50	17.25	17.50	18.50

Lewis Self-closing Hydrant (not illustrated)

Length in Ground, feet.....	2	2 1/2	3	3 1/2	4	4 1/2	5	6
3/4-inch Inlet, 3/4-inch Hose, Lead or Iron Pipe.....	10.00	10.75	11.00	11.75	12.00	12.75	13.00	14.00
1-inch Inlet, 1-inch Hose, Lead or Iron Pipe.....	15.50	16.25	16.50	17.25	17.50	18.25	18.50	19.50

Adjustable Service Boxes

In Figs. 3270 and 3271 bottom part is cast iron, shaped to fit over stop cock. Through bottom casting extends a 1-inch iron pipe, which can be raised or lowered to adjust the top cap to the level of the ground.

This upper section is held adjusted by small spring. In Fig. 3270, to admit key, top cap is removed by applying spanner on end of key. In Fig. 3271 a countersunk brass plug is inserted in top cap. To admit key this plug can be removed instead of cap. Key fits over forked rod, which is inside of box, and turning the rod opens and closes the stop cock.

The forked rod is included with every box at list prices quoted below, but keys are furnished only when ordered, and at 50 cents extra list.

Fig. 3272 has regular size inside pipe, 1 inch by 42 inch. Bottom adapted for $\frac{3}{4}$ and 1-inch service. Cap is brass bushed to prevent rusting. Rod has malleable connection to fit handle of corporation cock.

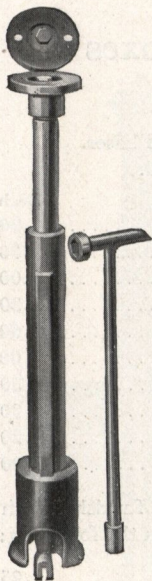


Fig. 3270
Stop Cock
Box

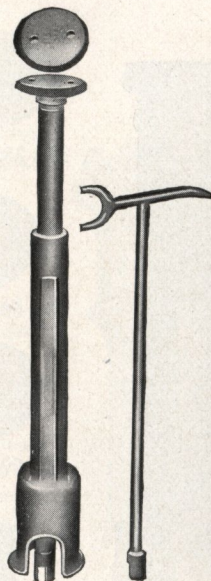


Fig. 3271
Stop Cock
Box



Fig. 3272
Stop Cock
Box

Adjustable Stop Cock Boxes

Number	1	2	3
Extension, inches	48-62	58-72	70-84
Top Section	1-inch Pipe	1-inch Pipe	1-inch Pipe
Fig. 3271, each	2.50	2.60	2.75
Fig. 3270, each	2.90	3.00	3.20
Fig. 3272 in any length up to 60 inches, each			3.00

New Pattern Service
or Stop Cock Boxes
 $2\frac{1}{2}$ -inch Shaft

Covers

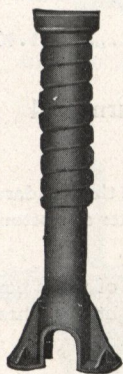
Extension
Section

Fig. 3273

Stop Cock Box, $2\frac{1}{2}$ -inch Shaft

No.	Extension	Each
92C	2 ft. to 3 ft. 2 in.	1.50
92D	2 ft. to 3 ft. 6 in.	1.60
93D	3 ft. to 4 ft.	1.70
93E	3 ft. to 4 ft. 6 in.	1.80
94D	3 ft. 6 in. to 4 ft. 9 in.	1.90
94E	3 ft. 6 in. to 5 ft.	2.00
95E	4 ft. to 5 ft. 6 in.	2.20
100E	4 ft. 6 in. to 6 ft.	2.30

Extension Sections for $2\frac{1}{2}$ -inch Service Boxes

No.	Increasing Length of Box	Each
151	$9\frac{1}{2}$ inches	.70
152	$16\frac{1}{2}$ inches	.80
153	28 inches	1.00
154	33 inches	1.10

Keys for removing covers, 6 cents each.

Extra Covers, 20 cents each.

Covers marked "Water" unless otherwise specified.

Round Head Roadway Boxes

 $4\frac{1}{4}$ -inch Shaft. Lock Cover

Fig. 3275 can be furnished with either plug or lock cover as illustrated.

This box can be used in the street and is designed to cover large stop cocks and small valves up to 3 inches size.

Covers marked "water" unless otherwise specified.

With Open Base

No.	Extension	Each
141Q	1 ft. 6 in. to 2 ft.	3.70
142Q	2 ft. 3 in. to 2 ft. 10 in.	4.00
142R	2 ft. 3 in. to 3 ft. 6 in.	4.40
143R	2 ft. 10 in. to 4 ft.	4.60
144R	3 ft. 3 in. to 4 ft. 6 in.	4.80
145R	3 ft. 10 in. to 5 ft.	5.00

Extension Piece for Roadway Boxes

 $4\frac{1}{4}$ -inch Shaft

Fig. 3274

Increases length of Box 18 inches	
Each	1.40

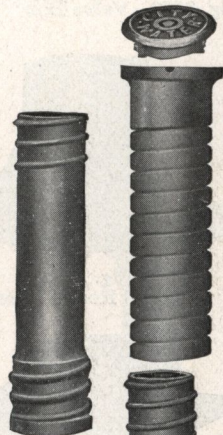


Fig. 3274
Extension
Piece
 $4\frac{1}{4}$ -inch
Shaft

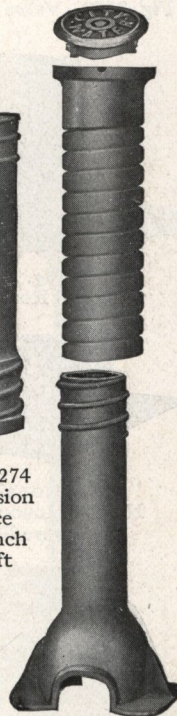


Fig. 3275
Round Head
Roadway Box

Screw Type Adjustable Valve Boxes

5 1/4-Inch Shaft

For water and gas valves. Interchangeable with all style bases.
Covers marked "Water" unless otherwise specified.



No. 255. Cover



No. 68. Cover



No. 69. Cover

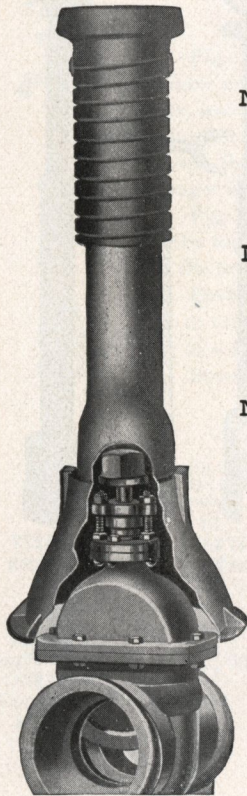


Fig. 3280. Valve Box



Fig. 3281
Extension
Piece

Size	Extension	Each
AAA	17-inch Stationary length.....	4.90
AA	1 foot 10 inches to 2 feet 4 inches.....	5.70
A	2 feet 4 inches to 3 feet 4 inches.....	6.00
B	3 feet to 4 feet.....	6.30
C	3 feet 6 inches to 4 feet 6 inches.....	6.60
CC	4 feet to 5 feet.....	7.00
D	3 feet 6 inches to 5 feet 6 inches.....	7.30
E	4 feet to 6 feet.....	7.90
F	5 feet to 7 feet.....	8.20
G	6 feet to 8 feet.....	9.00

Above price are for boxes complete with No. 6 Base. When furnished with other size bases, prices are reduced or increased in accordance with the following:

With No. 4 Round Base, reduce price.....	.25
With No. 140 Dome Base, same price as with No. 6.	
With No. 8 Round Base, add to price.....	.25
With No. 160 Oval Base, add to price.....	.35
With No. 162 Oval Base, add to price.....	1.25

Extension Piece for Valve Box

5 1/4-Inch Shaft

No. 58 increases length of box 14 inches.	
Each.....	1.40

Descriptions and Dimensions of Various Style Bases Furnished
with Extension Valve Boxes

No. 6 Round Base for 8-inch Round Valves or smaller sizes. This is the standard size used in quoting lengths and prices. Dimensions inside: Diameter at bottom 14 3/8 inches; height, 11 inches.

No. 4 Round Base for 4-inch Valves or smaller sizes; reduces price of valve box 25 cents. Dimensions inside: Diameter at bottom, 10 7/8 inches; height, 8 inches. With this base the valve will be 3 inches shorter than with No. 6 base.

No. 8 Round Base for 10-inch Round Valves or smaller sizes; increases price of valve box 25 cents. Diameter at bottom, 17 1/4 inches; height, 11 inches. With this base the valve box is same length as with No. 6 Base.

No. 140 Round Base with Flange 17 inches square. This base is especially adapted for use when valves are set near surface, and for any size valve up to 24 inches. Reduces length of box 6 inches. Price same as No. 6 Base.

No. 160 Oval Base for 16-inch Valves or smaller sizes; increases price of valve box, 35 cents. Diameter at bottom, 21 x 12 1/2 inches; height, 9 1/2 inches. With this base the valve box is 1 1/2 inches shorter than with No. 6 Base.

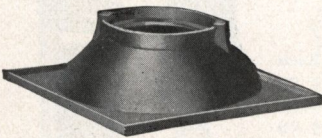
No. 162 Oval Base for 20-inch Valves or smaller sizes; increases price of valve box 1.25. Dimensions inside: 26 x 16 inches; height, 10 inches. With this base the valve box is 1 inch shorter than with No. 6.

Note: All Bases are same size on upper end where the shaft connects, and consequently are all interchangeable and can be used with any length.

No. 6 Round Base furnished on all orders unless otherwise specified.



Fig. 3282
No. 6 Round Base



No. 3283
No. 140 Round Base with
Square Flange

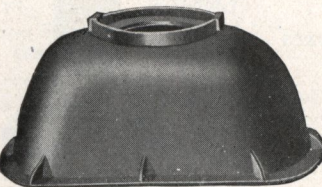


Fig. 3284
No. 160 Oval Base

Indicator Post Valves

These posts are designed expressly for use with water valves connected with street mains, and for use with valves for fire service in mill and factory yards, in connection with Automatic Sprinkler systems.

Turning the top nut or wheel opens or closes the valve, exposing the words "open" or "shut" on both sides, thereby positively indicating the condition of the valve.

Operating nut is regularly made $1\frac{1}{4}$ inches square, as specified by insurance authorities, but may be made any shape or size desired. Having no parts exposed that can be injured, it can be used in any public street or yard and cannot be manipulated without the aid of a wrench.

The post can be supplied separate and can be used with any make of valve. When ordered for valve already in use, orders should specify the name of the maker, the depth of bury, distance from center of valve to top of operating nut when valve is closed, center of valve to top of stuffing nut, and, preferably, a sketch with complete dimensions of valve body.

This device is approved and specified by insurance authorities.



Enlarged View
of Head

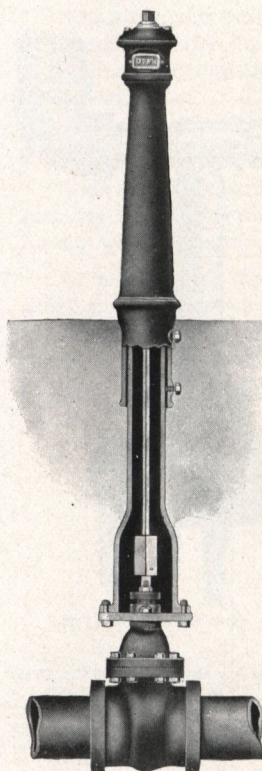


Fig. 3290
Indicator Post Valve

Price List

Indicator Post only (for 5-foot trench).....	40.00
Post and Valve complete, add to price of Indicator Post, as above given, the price of such size and style of valve as is to be used, plus 1.00 net.	
Indicator Posts for shallower trench than 5 feet—deduct for each 6 inches.....	1.25
For deeper trench than 5 feet add for each 6 inches.....	2.00
Wrenches, for Top Nut.....	1.00

When required, a locking device can be supplied at slight extra expense.

Floor Stands with Wheel

In Ordering Stands

The following particulars should be given:

Size of valve.

If required with indicator or not.

If rising or stationary stem.

Exact number of turns of spindle to open or shut valve.

If stems turns to right or left to open.

Size of square socket in coupling.

When Extension Stem is Required

It is necessary to give distance from center of valve opening to top of floor or support on which stand rests.

Price List, for Stand and Wheel Only, not Including Operating or Extension Stem

Style	Each
For Rising Stem Valve.....	20.00
For Stationary Stem Valve, with Indicator.....	27.00
For Stationary Stem Valve, without Indicator (not illustrated)...	20.00

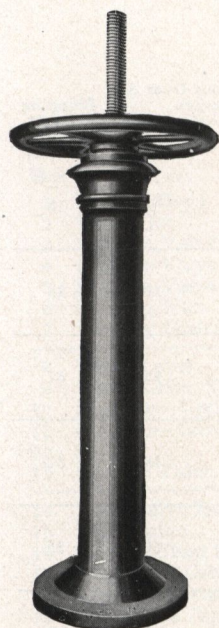


Fig. 3291
Floor Stand with
Rising Stem Indicator



Fig. 3292
Floor Stand
Stationary Stem
Graduated Indicator

Penberthy Automatic Cellar Drainer

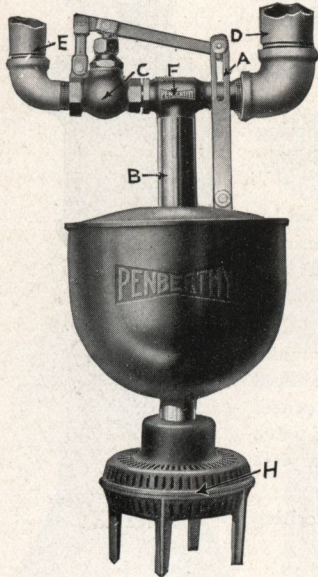
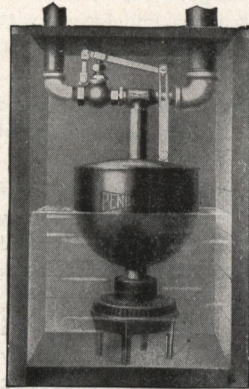


Fig. 3300. Automatic Type



The above cut illustrates the installation of the Penberthy Cellar Drainer in pit. The very compact arrangement of this drainer makes it necessary to construct a very small sump—thus effecting a considerable saving in both space and cost of construction. All working parts are conveniently located at top and easily accessible.

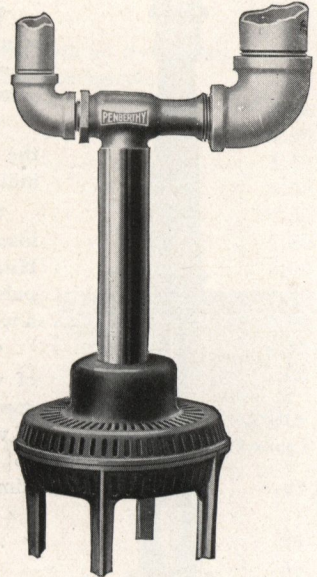


Fig. 3301. Non-Automatic Type

Penberthy Cellar Drainer

Size Number	List, Automatic	List, Non-Automatic	Supply Pipe Inches	Discharge Pipe Inches	Gallons Per Hour, 20 to 80 lbs. Pres. 3 to 18 Feet Elevation	
					Minimum	Maximum
1	25.00	15.00	1 1/2	1	115	650
2	40.00	25.00	3/4	1 1/4	180	1050
3	55.00	35.00	1	1 1/2	310	1650
4	80.00	50.00	1 1/4	2	450	2400
5	110.00	70.00	1 1/2	2 1/2	600	3200
6	160.00	100.00	2	3	780	4200
7	225.00	135.00	2 1/2	3 1/2	1000	5300
8	300.00	175.00	3	4	1250	6500

N. B. Capacities given above and in table below represent actual gallons of water removed from pit, and not the combined discharge of operating and drainage water as given in most tables.

Table of Capacities at Different Pressures and *Elevations

Size	Working Head Feet	Actual Capacities in Gallons of Water Per Hour Taken From Sump and not Total Amount of Discharged Water				Pipe Sizes, Inches		Dimensions Over All Inches		Shipping Weight Boxed Pounds
		At 25 Pounds Will Elevate	At 40 Pounds Will Elevate	At 60 Pounds Will Elevate	At 80 Pounds Will Elevate	Supply	Discharge and Suction	Height	Diameter	
1	3	230	400	530	650	1/2	1	20 3/4	9 1/2	18
	6	200	350	480	580					
	9	....	285	420	490					
	12	....	200	360	420					
	18	....	....	285	340					
2	3	430	620	820	1050	3/4	1 1/4	22 1/4	11 1/4	22
	6	320	480	700	840					
	9	....	400	600	780					
	12	....	260	480	620					
	18	....	....	300	450					
3	3	660	1100	1440	1650	1	1 1/2	25 3/8	15 1/8	37
	6	520	860	1230	1440					
	9	....	720	1050	1320					
	12	....	470	840	1040					
	18	....	....	580	760					
4	3	960	1600	2020	2400	1 1/4	2	27 1/2	18 1/2	51
	6	760	1240	1880	1980					
	9	....	1040	1600	1800					
	12	....	670	1280	1440					
	18	....	....	900	1050					
5	3	1280	2100	2700	3200	1 1/2	2 1/2	27 3/8	20 1/8	55
	6	1000	1620	2300	2820					
	9	....	1260	1960	2600					
	12	....	840	1560	2060					
	18	....	....	1080	1500					
6	3	1680	2800	3560	4200	2	3	36	20	50
	6	1320	2200	3050	3700					
	9	....	1840	2600	3420					
	12	....	1200	2080	2700					
	18	....	....	1440	2000					

*Elevations figured from water level.

Penberthy Automatic Cellar Drainer—Continued

The Penberthy Automatic Cellar Drainer is a Penberthy water pressure ejector of high capacity, automatically operated by a float-controlled quick-opening and closing valve C. This valve is never partially opened—it cannot leak. It allows the ejector to give its greatest efficiency by working to full capacity. The float arms are slotted at A, where they connect to the valve lever C. This prevents the ejector from operating until the water has raised the float up to the highest point and, as the water is ejected, they travel down the length of these slots before the weight of the float closes the valve. This allows the machine to work for longer periods and not so often, thus preventing wear and waste of water.

This drainer is particularly adapted for use in pits, sumps, cellars, tanks, settling basins, or wherever it is desired to keep water or other liquids from going above a certain level. It is highly efficient, occupies little space, and can be regulated for any water pressure. If the latter exceeds 80 pounds it is desirable to throttle it down with a globe valve.

It will be noted that space is further economized by building the float around suction pipe B. This feature has the added advantage of being rigid, and obviates the trouble experienced with a loose float. The other details are built directly above the float. This not only keeps the whole machine in as small a space as possible, but also keeps all working parts, except strainer and float, above the water, thus preventing corrosion or the exterior parts becoming clogged up by deposits of slime, dirt or sediment. Construction of strainer H prevents fouling of the interior parts.

Parts or Repairs for Penberthy Automatic Cellar Drainer

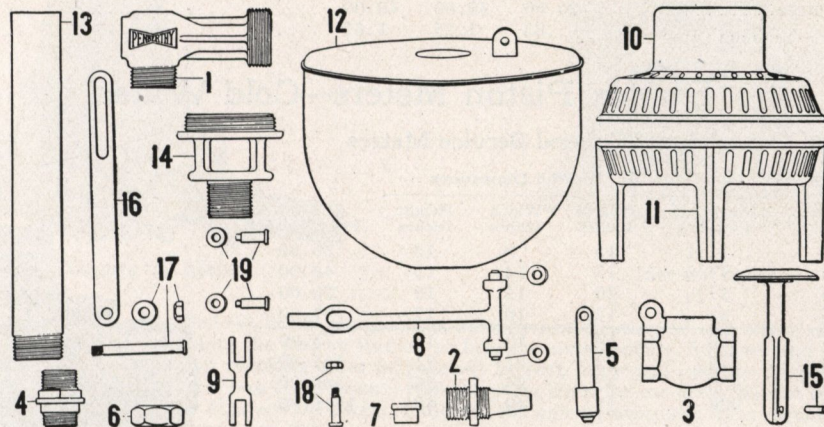


Fig. 3310. Parts or Repairs

List Prices

Size Drainer.....	1	2	3	4	5
1 Ejector Body.....	2.00	4.00	6.00	8.00	12.00
2 Water Jet.....	.70	1.20	2.00	3.00	4.50
3 Balance Valve Body.....	2.00	4.00	6.00	8.00	12.00
4 Balance Valve Bonnet.....	.60	1.00	2.00	3.20	4.50
5 Balance Valve Stem.....	.50	.80	1.50	2.00	3.00
6 Packing Nut.....	.25	.30	.40	.60	1.00
7 Packing Gland.....	.20	.20	.30	.50	1.00
8 Valve Lever.....	1.00	1.60	2.50	3.50	5.00
9 Valve Lever Yoke.....	.30	.40	.60	.80	1.00
10 Strainer—Upper Half.....	1.60	1.60	1.60	3.00	3.00
11 Strainer—Lower Half.....	1.20	1.20	1.20	2.50	2.50
12 Float.....	4.00	6.00	8.00	10.00	12.00
13 Suction Tube.....	1.40	3.00	4.50	6.50	9.00
14 Foot Valve Body.....	2.00	2.00	2.00	4.00	4.00
15 Foot Valve.....	1.00	1.00	1.00	2.00	2.00
16 Slotted Float Links, each.....	.30	.40	.50	.60	1.00
17 Float Pin (complete).....	.20	.20	.20	.40	.40
18 Lever Pin (complete).....	.15	.15	.15	.30	.30
19 Yoke Pins (2).....	.20	.20	.20	.40	.40

Important: When ordering parts for repairs, be sure to give number and name of each part, and size of drainer for which repairs are ordered.

Water Meters



Fig. 3320. Worthington Cold Water Disc Meter

Illustration shows the $\frac{3}{4}$, $1\frac{1}{2}$ and 4-inch sizes. The smallest cut shows the design of the $\frac{5}{8}$, $\frac{3}{4}$ and 1-inch sizes. The second cut the $1\frac{1}{4}$, $1\frac{1}{2}$ and 2-inch sizes, and the larger cut the 3, 4 and 6-inch sizes.

The $\frac{5}{8}$, $\frac{3}{4}$ and 1-inch are made up with spuds in connection with which the standard brass couplings may be used. The $1\frac{1}{4}$, $1\frac{1}{2}$ and 2-inch sizes are tapped for standard pipe thread, and the larger sizes are fitted with screwed companion flanges. All meters are provided with interior strainers.

Unless otherwise specified, standard circle counters, registering in cubic feet are furnished.

Worthington Disc Meter

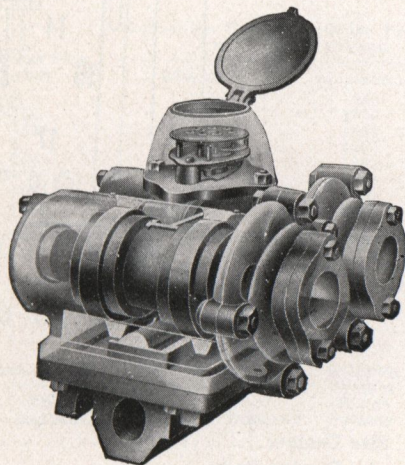
Size.....	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	3	4	6
Normal Capacity, gallons per minute...	12	24	48	60	70	115	200	400	700
Maximum Capacity, gallons per minute...	15	30	60	75	90	150	270	540	900
Length, inches.....	$7\frac{3}{8}$	9	$10\frac{7}{8}$	$11\frac{1}{2}$	$12\frac{5}{8}$	14	24	29	36
Height, inches.....	$6\frac{5}{8}$	$7\frac{3}{8}$	$7\frac{3}{4}$	$8\frac{3}{4}$	$9\frac{1}{4}$	10	13	$15\frac{1}{2}$	19
Width, inches.....	6	$7\frac{3}{8}$	$8\frac{1}{2}$	$8\frac{3}{4}$	$10\frac{1}{2}$	$12\frac{3}{8}$	18	$23\frac{1}{2}$	30
Each, all castings Brass.....	13.00	20.00	27.00	35.00	50.00	80.00	150.00	300.00	600.00
Each, outer castings Galvanized Iron...	.....	.....	.....	.....	.....	65.00	125.00	240.00	450.00
Hot Water Disc Meters.....	20.00	30.00	40.00	.....	.....	.....	.....	.....	.....
Brass Couplings.....	.83	1.25	1.67	.....	.....	.....	.....	.....	.....

Duplex Piston Meters—Cold Water

Sizes and Capacities of General Service Meters

Size Inches	Gallons per Minute		Over-all Dimensions			Price, Each
	Normal Capacity	Maximum Capacity	Length Inches	Width Inches	Height Inches	
$\frac{5}{8}$	8	$11\frac{1}{4}$	15	9	13	36.00
$\frac{3}{4}$	16	$22\frac{1}{2}$	17	13	15	48.00
1	25	$37\frac{1}{2}$	20	15	16	70.00
$1\frac{1}{2}$	33	45	17	16	17	72.00
2	45	60	19	16	17	75.00
3	130	172	25	22	21	165.00
*4	325	450	37	34	36	540.00
*6	700	900	51	49	48	1240.00

* Screw Flanges.

Fig. 3321
Worthington Duplex Piston Meter

Duplex Hot Water Meters

Size.....	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{2}$
Boiler, horse-power.....	60	120	175	225
Each.....	60.00	75.00	95.00	110.00
Size.....	2	3	4	6
Boiler, horse-power.....	300	800	2500	5000
Each.....	135.00	250.00	850.00	2050.00

Worthington Turbine Meters

Heavy Pattern for Hot Water

A hot water meter is an essential element of boiler plant economy. It is of little value to weigh the coal if the feed water is not measured. Its use solves the difficulty of readily ascertaining the steam-making values of different fuels. If the boiler is over-taxed or affected by scale or soot, the method of firing inefficient, the furnace defective, or the coal inferior quality, the fact is reflected immediately in the registration of the meter.

Turbine Hot Water Meters

Size, inches.....	2	3	4	6
Capacity, horse-power of boilers..	200-700	500-1500	1200-3000	2500-6000
Length, inches.....	15	21	$24\frac{1}{2}$	32
Width, inches.....	10	14	19	26
Height, inches.....	17	20	23	27
Each, including separate strainer..	165.00	270.00	450.00	900.00

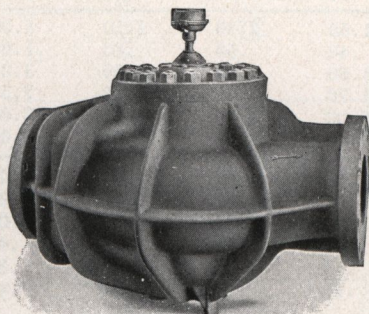


Fig. 3322. Turbine Meter

Thomson Meters

In all sizes $\frac{5}{8}$ to 6-inch inclusive, the castings are made of best bronze composition. The $1\frac{1}{2}$ and 2-inch meter spuds are threaded inside for $1\frac{1}{2}$ and 2-inch standard pipe. The 3, 4 and 6-inch meters are fitted with inside threaded cast iron flanges or spigot flanges, if preferred, without extra charge.

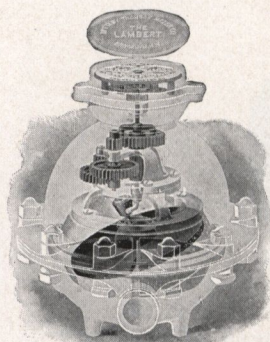


Fig. 3330
Thomson Meter

Size.....	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{2}$	2	3	4	6
Weight, pounds.....	11	$13\frac{3}{4}$	$19\frac{3}{4}$	$33\frac{1}{2}$	$55\frac{1}{2}$	98	275	475
Total Length, inches....	$7\frac{5}{8}$	$8\frac{9}{16}$	$10\frac{1}{2}$	12	$14\frac{3}{4}$	18	$26\frac{3}{8}$	$33\frac{1}{8}$
Height, from base to center of spuds, inches....	2	$2\frac{1}{8}$	$1\frac{9}{16}$	$2\frac{1}{16}$	$2\frac{3}{16}$	$3\frac{3}{4}$	$4\frac{13}{16}$	$5\frac{7}{8}$
Total Height, inches....	$8\frac{3}{4}$	9	$9\frac{5}{8}$	11	$12\frac{1}{4}$	$14\frac{1}{4}$	$19\frac{1}{4}$	23
Maximum Delivery, cubic feet per minute....	3	5	9	14	25	40	80	140
Disc Water Meters, each.	18.33	25.00	33.33	66.66	104.16	166.66	366.66	733.33
Connections for lead or iron pipe drilled for sealing, per set.....	.83	1.25	1.66	2.75	3.50	.....	.....	.....

Niagara Oil Meters

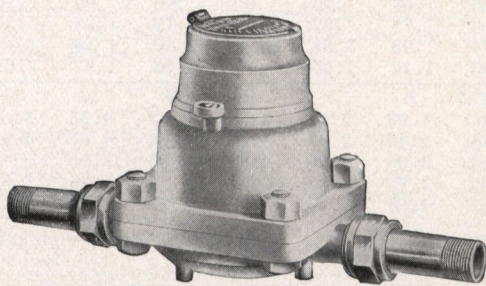
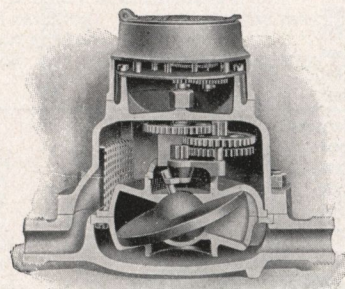


Fig. 3331. Niagara Oil Meter



Interior View

These Meters are used for measuring fuel oil, crude oil, gasoline, kerosene, lubricating oil and oils of all kinds. They are used to show the consumption and regulate the flow of fuel oil to burners under boilers, furnaces and ovens; they are attached to gasoline pumps for measuring and checking sales in garages; in fact, they will operate on pressure of about a pound per square inch or higher, and on oil of any temperature, thus adapting them for use under almost any condition.

The Straight Reading Dial, used on the Niagara Oil Meter, indicates the gallons measured by a regular number, with figures having the usual numerical arrangement and values.

When measuring crude oil and other oils from which dirt and grit collect rapidly, our Fig. 1012 Strainer is recommended.

Pipe Connection, inches.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$
U. S. Gallons per Hour.....	10 to 500	30 to 1000	60 to 2000	120 to 4000
Minimum Pressure, pounds.....	1	1	2	2
Each.....	20.00	30.00	40.00	80.00
Pipe Connections, inches.....	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
U. S. Gallons per Hour.....	175 to 6000	250 to 9000	250 to 9000	250 to 9000
Minimum Pressure, pounds.....	3	3	3	3
Each.....	120.00	160.00	160.00	200.00

Note: The minimum quantities are the smallest rates of flow which the meters should be expected to measure accurately. The maximum quantities are the highest rates of flow for continuous operation without undue wear. Meters used only occasionally may be safely operated on flows twice the maximum quantities. Size of meter is determined by the flow to be measured and not by the size of pipe. Pressure may be supplied by pump, gravity or air pressure. Meters will work on any pressure above the minimum for their respective sizes.

Sizes to 2-inch inclusive with union connections. Larger sizes, flanged.

Fish Traps

Strainer proper consists of two cast brass slotted plates which rest in vertical grooves. The total area through these slots is more than the area of the pipe line. Plates may be readily taken out and cleaned. Sizes to $1\frac{1}{2}$ inch inclusive are screwed; larger sizes, flanged.

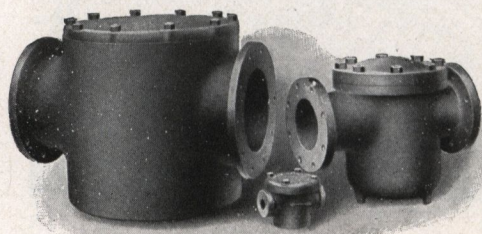


Fig. 3332. Fish Traps

Size.....	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{2}$
Each.....	4.00	4.50	5.00	6.00
Size.....	2	3	4	6
Each.....	9.00	16.00	20.00	35.00

Larger sizes to 12 inch quoted on application.

Water Hose

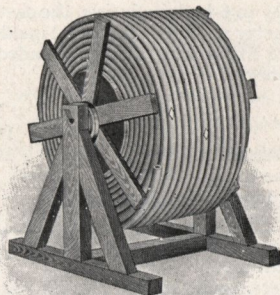


Fig. 3340

Conducting and Garden Hose

Internal Diameter	1/2	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3
2-ply, per foot.	.20	.25	.33	.42	.50	.58	.66	.75	.83	.92	.99
3-ply, per foot.	.25	.30	.40	.50	.60	.70	.80	.90	1.00	1.10	1.20
4-ply, per foot.	.30	.37	.50	.62	.75	.87	1.00	1.12	1.25	1.37	1.50
5-ply, per foot.	.37	.46	.62	.77	.93	1.08	1.25	1.40	1.56	1.71	1.87
6-ply, per foot.	.45	.55	.75	.93	1.12	1.30	1.50	1.68	1.87	2.05	2.25

Internal Diameter	3 1/2	4	5	6	7	8	9	10	11	12
2-ply, per foot.	1.15	1.32	1.65	1.98	2.31	2.64	2.97	3.33	3.66	3.99
3-ply, per foot.	1.40	1.60	2.00	2.40	2.80	3.20	3.60	4.00	4.40	4.80
4-ply, per foot.	1.75	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.50	6.00
5-ply, per foot.	2.18	2.50	3.12	3.75	4.38	5.00	5.62	6.25	6.87	7.50
6-ply, per foot.	2.62	3.00	3.75	4.50	5.25	6.00	6.75	7.50	8.25	9.00

Acid Hose

Grade A is intended to withstand the action of acids and is the best made. Grade B gives highly satisfactory service where hose is not used for long continuous periods, and is liberally guaranteed for weaker acids. Grade C is especially made for use with weaker acids, acid vapors, etc.

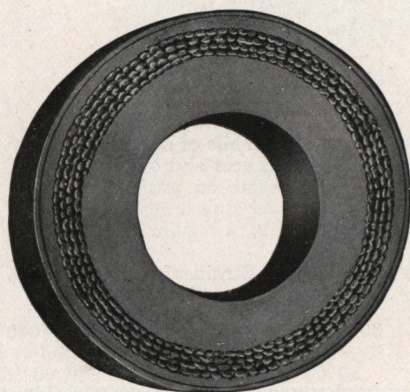


Fig. 3341. Acid Hose

	1/8 Lining	3/16 Lining	1/4 Lining
3/4-inch, 4-ply.....	.75	.90	1.10
1-inch, 4-ply.....	1.00	1.15	1.35
1 1/4-inch, 4-ply.....	1.15	1.35	1.55
1 1/2-inch, 4-ply.....	1.30	1.55	1.80
2-inch, 4-ply.....	1.55	1.85	2.25
2 1/4-inch, 4-ply.....	1.70	2.10	2.50
2 1/2-inch, 4-ply.....	1.85	2.30	2.75
3-inch, 4-ply.....	2.25	2.75	3.25
3 1/2-inch, 4-ply.....	2.75	3.25	3.75
4-inch, 4-ply.....	3.25	3.75	4.25

5 or 6-ply made at an additional cost of 25 per cent for each added ply.

Rubber Tubing

Plain or Corrugated, White, Black or Red

Internal Diam. .	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1
Per Foot.....	.08	.12	.16	.18	.20	.25	.30	.35	.45

Cloth Insertion, White, Red or Black

Internal Diam.	1/4	5/16	3/8	1/2	5/8	3/4
Per Foot.....	.18	.20	.23	.28	.33	.38

Soda Water and Chemical Tubing

Size.....	3/8	3/8	3/8	3/8	3/8	3/8
Ply.....	5	6	7	8	9	10
Per Foot.....	.25	.30	.35	.40	.45	.50

Braided Tubing



Fig. 3342. For Pressures to 500 Pounds

Size.....	3/16	1/4	5/16	3/8
Per Foot.....	.09	.10	.12	.14

Standard color of Braided Tubing is green.

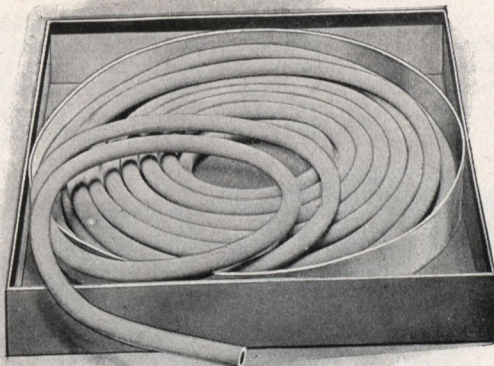


Fig. 3343. Plain Tubing

Steam Hose



Fig. 3350. Steam Hose

Steam hose has always been one of the most unsatisfactory articles of manufacture, for steam being used to vulcanize rubber, the continued use through the hose burns and destroys the rubber, hence the unwillingness of most manufacturers to warrant steam hose, especially when used at high temperatures.

We offer four grades of steam hose, designed for conditions as follows:

Grade A. Will withstand the action of steam as perfectly as any hose that can be made and is warranted the equal or superior of any hose for steam purposes.

Grade B. Is a strictly first grade of steam hose, made with great care from the best and strongest duck. It has a seamless tube and high grade of friction. Compares with the first quality of many manufacturers.

Grade C. Is a good grade and can be used where the conditions are not exacting. It is above the average of medium grade steam hose and adapted for conditions that do not demand the highest grade.

Grade D. Is made with a seamless tube and the quality of material and construction adapt this hose to a considerable field of uses.

Steam Hose

Internal Diameter, inches.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2	$2\frac{1}{4}$	$2\frac{1}{2}$
3-Ply, Maximum Working Pressure.....	40	26.7	20	16	13.3	11.4	10	8.9	8
3-Ply, per foot.....	.47	.57	.70	.85	1.02	1.18	1.34	1.50	1.66
4-Ply, Maximum Working Pressure.....	80	53.3	40	32	26.7	22.9	20	17.7	16
4-Ply, per foot.....	.56	.71	.87	1.04	1.25	1.45	1.66	1.87	2.08
5-Ply, Maximum Working Pressure.....	120	80	60	48	40	34.3	30	26.7	24
5-Ply, per foot.....	.70	.87	1.07	1.30	1.56	1.81	2.07	2.33	2.60
6-Ply, Maximum Working Pressure.....	160	106.7	80	64	53.3	45.7	40	35.5	32
6-Ply, per foot.....	.84	1.05	1.28	1.56	1.87	2.17	2.49	2.80	3.12
7-Ply, Maximum Working Pressure.....	180	120	90	72	60	51.4	45	40	36
7-Ply, per foot.....	.98	1.23	1.50	1.82	2.18	2.53	2.90	3.27	3.64
8-Ply, Maximum Working Pressure.....	200	133.3	100	80	66.7	57.1	50	46.6	40
8-Ply, per foot.....	1.12	1.41	1.70	2.08	2.50	2.90	3.32	3.74	4.16

Note: Unless orders specify otherwise, Grade B Hose will be furnished.

Brewers Hose

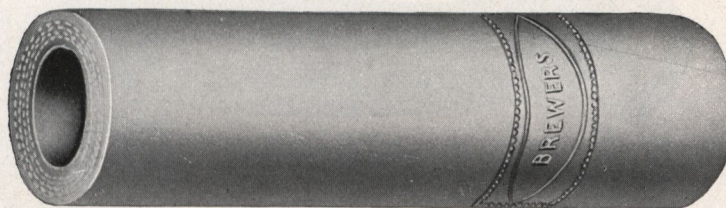


Fig. 3351. Brewers Hose

Made to meet the requirements of brewers' use. Warranted not to kink. The lining is made of a gum that will resist the action of hot liquids and steam. Special care is taken to have the tube smooth and free from imperfections. Cover extra heavy to stand rough usage, and can be furnished either white or black.

Brewers Hose

Size, inches.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2	$2\frac{1}{4}$	$2\frac{1}{2}$	3
3-Ply, per foot.....	.47	.57	.70	.85	1.02	1.18	1.34	1.50	1.66	2.00
4-Ply, per foot.....	.56	.71	.87	1.04	1.25	1.45	1.66	1.87	2.08	2.80
5-Ply, per foot.....	.70	.87	1.07	1.30	1.56	1.81	2.07	2.33	2.60	3.50
6-Ply, per foot.....	.84	1.05	1.28	1.56	1.87	2.17	2.49	2.80	3.12	4.20
7-Ply, per foot.....	.98	1.23	1.50	1.82	2.18	2.53	2.90	3.27	3.64	4.90
8-Ply, per foot.....	1.12	1.41	1.70	2.08	2.50	2.90	3.32	3.74	4.16	5.60

Note: Intermediate sizes are charged at the list price or the next larger size, that is, $1\frac{1}{8}$ is sold by $1\frac{1}{4}$ list, etc.

Suction Hose

For Excavating, Wrecking, Mining, Sand Pumps, Steam Fire Engines, Dredging, etc.

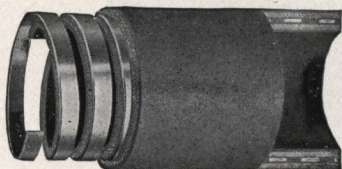


Fig. 3360. Smooth Bore

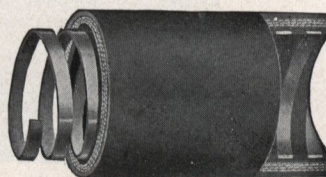


Fig. 3361. Rough Bore

Suction Hose

Internal Diameter, inches.....	1	1¼	1½	1¾	2	2¼	2½	3	3½	4	4½
Smooth Bore, per foot.....	1.05	1.30	1.70	2.15	2.60	3.05	3.50	4.50	5.50	6.50	7.50
Rough Bore, per foot.....	.90	1.15	1.50	1.90	2.30	2.70	3.10	4.00	4.90	5.80	6.70

Internal Diameter, inches.....	5	5½	6	7	7½	8	9	10	12	14	15
Smooth Bore, per foot.....	8.50	9.50	10.50	13.50	15.00	16.50	19.50	22.50	27.50	32.50	35.00
Rough Bore, per foot.....	7.60	8.50	9.50	12.00	13.50	15.00	17.50	20.00	25.00	.....	.....

Suction Hose on Spiral Brass Wire

Internal Diameter, inches.....	¾	1	1¼	1½	1¾	2	2¼	2½
Per foot.....	.77	1.00	1.25	1.65	2.10	2.50	2.95	3.40

Wire Winding



Fig. 3362. Flat Wire

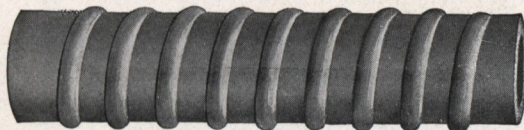


Fig. 3363. Half-Round Wire



Fig. 3364. Round Wire

Wire Winding—Flat, Half-Round and Round

Extra Charge on Steam and Water Hose

Size, inches.....	½	¾	1	1¼	1½	1¾	2	2¼	2½
3-Ply, per foot..	.06½	.07½	.09	.10	.11	.14	.18	.20	.22
4-Ply, per foot..	.07½	.08½	.10	.11	.14	.18	.20	.22	.28
5-Ply, per foot..	.08½	.09½	.11	.14	.18	.20	.22	.28	.30
6-Ply, per foot..	.09½	.11	.14	.18	.20	.22	.28	.30	.34
7-Ply, per foot..	.10½	.14	.18	.20	.22	.28	.30	.34	.38
8-Ply, per foot..	.14	.18	.20	.22	.28	.30	.34	.38	.42

Metal Hose Protectors

Adapted for hose of all kinds—Steam, Water, Air, etc.

Prevents hose from kinking and protects it from cutting and chafing.

Prices for hose armored with Fig. 3365 Protector will be quoted on specification as to size of hose, or orders for hose with this covering will be filled at regular market prices at time of purchase.

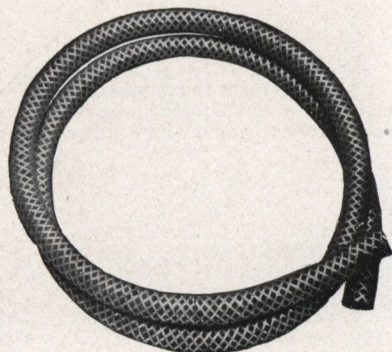


Fig. 3365. Metallic Flexible Tubing

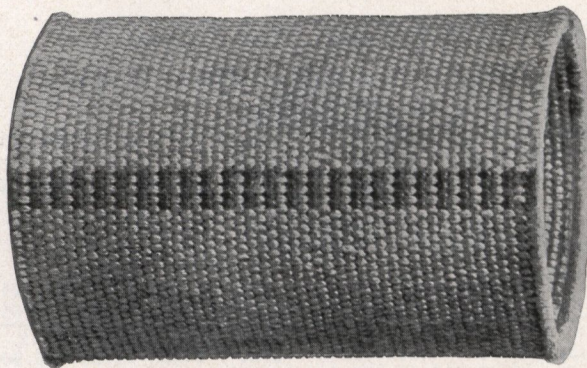


Fig. 3370. Underwriters' Best

Namanco Underwriters' Best

This brand of unlined linen hose is our best and woven of the highest grade flax yarns. Pressure 550 pounds.

Made in any length up to and including 500 feet.

Price List

Size.....	¾	1	1¼	1½	2	2¼	2½	3
Per foot....	.24	.27	.30	.33	.42	.46	.50	.65

With or without Inspector's labels.



Fig. 3371. Namanco A

Unlined Linen Fire Hose

Brands

Namanco A and Namanco B are graded in the order named

Pressure, Namanco A, 400 pounds. Namanco B, 300 pounds.

Made in all sizes up to 10-inch inside diameter, and in lengths up to and including 500 feet.

Both Grade A and Grade B will pass steamboat inspection.



Fig. 3372. Namanco B

Namanco A											
Size.....	¾	1	1¼	1½	1¾	2	2¼	2½	3	4	5
Per foot....	.18	.20	.22	.25	.28	.30	.33	.35	.50	.65	.80

Namanco B											
Size.....	¾	1	1¼	1½	1¾	2	2¼	2½	3	4	5
Per foot....	.18	.20	.22	.25	.28	.30	.33	.35	.50	.65	.80

Cotton Mill Hose—Rubber Lined

Brands

Namanco C, Guaranteed Pressure, pounds.....	350
Namanco D, Guaranteed Pressure, pounds.....	300
Namanco E, Guaranteed Pressure, pounds.....	300
Namanco F, Guaranteed Pressure, pounds.....	300

Namanco C								
Size.....	1	1¼	1½	2	2½	3	3½	4
Per foot....	.40	.45	.50	.65	.80	1.00	1.50	2.00

Namanco D								
Size.....	1	1¼	1½	2	2½	3	3½	4
Per foot....	.40	.45	.50	.65	.80	1.00	1.50	2.00

Namanco E								
Size.....	1	1¼	1½	2	2½	3	3½	4
Per foot....	.40	.45	.50	.65	.80	1.00	1.50	2.00

Namanco F								
Size.....	1	1¼	1½	2	2½	3	3½	4
Per foot....	.40	.45	.50	.65	.80	1.00	1.50	2.00

Namanco

Underwriters' Cotton Rubber-lined Hose.

Guaranteed to conform to the specifications of the Associated Mutual Fire Insurance Association, and the National Board of Fire Underwriters for outdoor factory fire protection.

Price List

Size, inside diameter, inches.....	1½	1⅝	2⅛	2⅝
Per foot.....	.60	.70	.80	.90


Fig. 3373
Rubber-lined Cotton Mill Hose

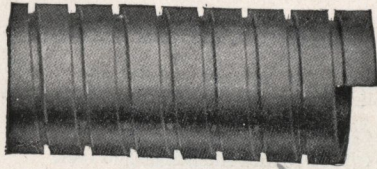


Fig. 3380. Flexible Tubing

Flexible Metal Hose and Tubing

Four-wall Interlocking Construction—Heavy Weight For High Pressures

Galvanized Steel Hose, suitable for oils, tar, ammonia, superheated steam, and for such liquids as will not rust steel.

Bronze Hose, standard construction, for high steam pressures, for blowing boiler flues, etc.

Flexible Tubing—Asbestos Packed

Internal Diameter, inches.....	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Galvanized Steel, per foot.....	.30	.35	.40	.45	.55	.85	.95	1.30	1.70	2.25
Bronze, per foot.....	.50	.60	.75	1.25	1.50	2.05	2.65	3.20	4.25	5.65
Internal Diameter, inches.....	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	5	6	8	10	12	
Galvanized Steel, per foot.....	3.20	3.55	4.15	4.50	5.40	6.50	8.65	14.00	16.00	
Bronze, per foot.....	6.75	7.90	9.00	10.15	13.10	15.75	21.00	30.00	40.00	

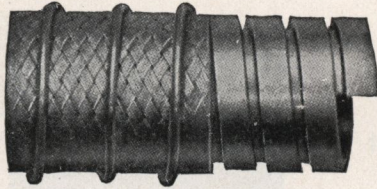


Fig. 3381. Braided Flexible Tubing

Four-wall Interlocking Construction—For Rough Handling Under Highest Pressures

Same construction as above, except that it is made stronger with a wire braiding and a spiral to protect the braiding.

Recommended for highest internal and external pressures and for service in connection with rock drills, pile drivers, steam hammers, syphoning, sinking shafts, for testing water and gas mains, etc.

Flexible Tubing—Asbestos Packed, with Braid and Spiral

Internal Diameter, inches.....	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Galvanized Steel, per foot.....	.45	.50	.60	.70	.80	1.20	1.70	2.10	2.75	3.50
Bronze, bronze braided, per foot.....	.70	.85	1.00	1.50	1.75	2.50	3.70	4.85	6.30	8.40
Internal Diameter, inches.....	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	5	6	8	10	12	
Galvanized Steel, per foot.....	4.20	5.80	7.35	8.50	10.40	13.85	20.30	25.00	30.00	
Bronze, bronze braided, per foot.....	10.00	14.00	18.25	20.50	25.00	33.00	55.20	65.00	75.00	

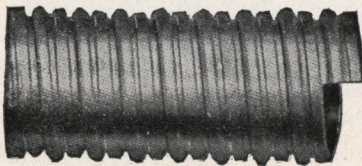


Fig. 3382. Flexible Suction Hose

Double Groove Metal Hose

The ideal suction hose in connection with diaphragm or bilge pumps.

Extremely flexible.

As light weight as rubber.

Can be furnished in all sizes with a covering of wax and para gum treated fabric, at special prices.

Double Groove Metal Suction Hose

Internal Diameter, inches.....	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2
Galvanized Steel, per foot.....	.20	.22	.25	.34	.43	.56	.81	1.09	1.39	1.94	2.19
Bronze, per foot.....	.40	.42	.51	.71	.87	1.09	1.63	2.12	2.68	3.88	4.54
Internal Diameter, inches.....	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6	8	10	12	
Galvanized Steel, per foot.....	2.78	4.03	4.65	6.23	7.35	8.42	10.10	13.50	20.00	24.00	
Bronze, per foot.....	5.01	7.06	8.35	11.09	12.30	14.45	18.80	25.00	38.00	44.00	

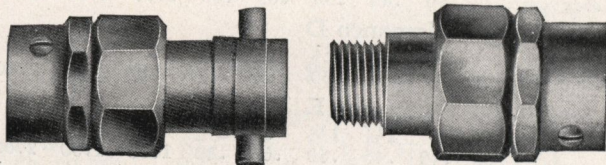


Fig. 3383. Packed Couplings, for Steam

Attached with reinforced and asbestos-covered ends to permit handling of the hose when under steam pressure. Guaranteed tight under highest pressures.

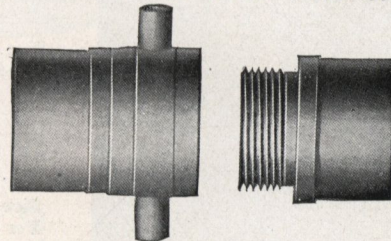


Fig. 3384. Soldered Couplings, for Oil, Air, Gas and Water

These Couplings should never be used on steam hose, or for any purpose where the heat is sufficient to soften the solder.

Couplings—Price Per Set of Two Pieces

Internal Diameter Hose.....	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	4
Packed Couplings.....	1.80	2.10	2.55	3.00	5.70	6.90	8.25	11.25	18.00	24.00	36.00	45.00
Soldered Couplings.....	.90	1.05	1.20	1.95	2.55	3.00	3.75	4.50	5.25	7.50	9.75	14.25

Prices for larger sizes on application, special couplings made to order.

Flanges up to 15 inches diameter can be attached at special prices.

Flexible Metal Hose and Tubing

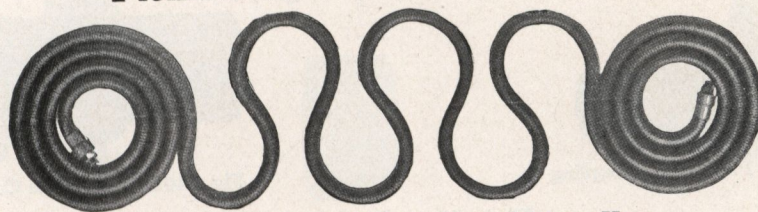


Fig. 3390. Galvanized Steel Armored Water Hose

The ideal garden hose, especially recommended for irrigation, for deck hose and for spraying purposes, etc.

Steel Armored Hose

Size, inches	1/2	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3
Water Hose, per foot	.50	.60	.80	1.00	1.20	1.30	1.50	....	....
Air Hose, per foot	.54	.70	.90	1.10	1.30	....	....	....	....
Steam Hose, per foot	.70	.90	1.20	1.50	1.90	2.20	2.50	3.00	....
Suction Hose, per foot	....	....	2.00	....	2.40	....	2.80	3.20	4.00
Suction Hose Couplings, per end	....	....	3.00	....	4.00	....	5.00	8.00	10.00
Couplings, Water, Air, Steam, per end	1.20	1.60	2.00	2.40	2.80	3.20	3.60	4.00	10.00

Special prices for lengths of 10 feet and less.

For Steam, the ends or the entire length is covered with asbestos and cotton fabric to permit safe handling.



Fig. 3391. "Indestructene" Flexible Hose

"Indestructene" Four-Wall Interlocking Flexible Metal Hose

Covered with Remanit Braiding, the best known silk insulating compound, braided over with wax and para gum treated fabric.

Adapted for highest steam pressures and a hose that can be handled by the operator.

Made in Galvanized Steel and Bronze. List prices same as Fig. 3381.

Bronze Armored Hose

For alcohol, vinegar, wine, and an ideal brewers' hose. Lined with highest grade antimony rubber—odorless and tasteless. If the rubber should become worn it can be renewed at a small cost. Cannot kink.

Bronze Armored Hose

Internal Diameter, inches	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Price per Foot	2.30	3.00	3.40	4.20	5.00	7.50	9.00
Heavy Couplings, per Set	2.00	3.80	4.60	5.50	7.50	12.00	16.00

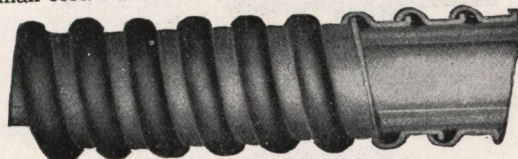


Fig. 3392. Bronze Armored Hose

All Metal Flexible Gas Tubing

Safe, Sanitary, Odorless

Internal Diameter Inch	Steel Per Foot	Nickel Per Foot	Bronze Per Foot	Brass Per Foot
1/16	.11	.22	.25	.20
1/8	.12	.23	.26	.21
3/16	.13	.24	.27	.22
1/4	.18	.31	.39	.31
5/16	.21	.37	.48	.38
3/8	.28	.52	.73	.58
1/2	.40	.67	.97	.85
5/8	.50	.79	1.10	1.00

With Braided Cover

Internal Diameter Inch	Steel With Steel Braiding	Steel With Bronze Braiding
1/4	.23	.30
3/8	.27	.37
1/2	.35	.47
3/4	.43	.56
1	.59	.78

We furnish this tubing for gas in any length and with rubber ends or brass couplings attached.

All sizes made single groove and double groove rubber packed, and single and double groove asbestos packed.

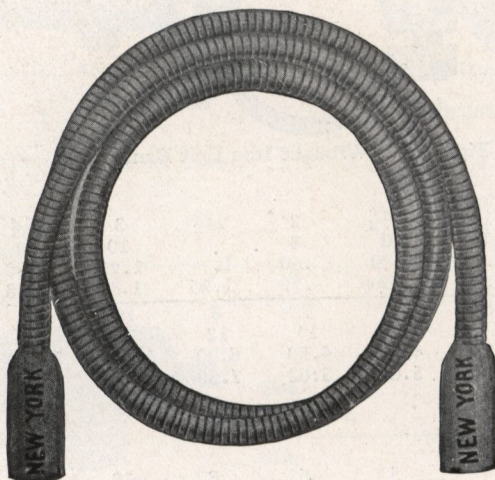


Fig. 3393. All Metal Flexible Gas Tubing

Hose Couplings



Fig. 3400. Plain Hose Coupling

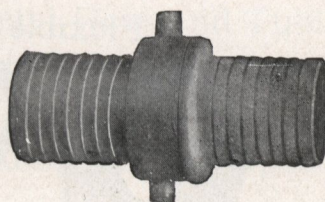


Fig. 3401. Lug Hose Coupling

Plain Hose Couplings

Size, inches.....	$\frac{1}{2}$	$\frac{3}{4}$	1
Hose Thread, per dozen.....	2.40	2.40	4.40
Iron Pipe Thread, per dozen.....	2.65	2.65	4.65

Lug Hose Couplings

Size, inches.....	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	5	6
Hose Thread, per dozen.....	10.00	14.00	24.00	48.00	75.00	120.00	150.00	250.00	500.00
Iron Pipe Thread, per dozen.....	10.50	15.00	26.00	50.00	76.00	120.00	150.00	250.00	500.00

Steam Hose Couplings

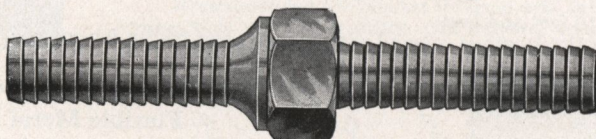


Fig. 3402. Brass Steam Hose Coupling

Steam Hose Couplings

Size, inches.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Per Dozen.....	16.00	16.00	19.00	25.50	33.00	44.00	75.00

Suction Hose Couplings

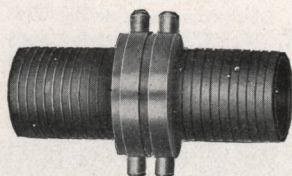


Fig. 3403. Suction Hose Coupling

Size, inches.....	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6	7	8
Each.....	5.25	7.50	9.50	12.50	16.00	20.00	28.00	54.00	80.00

Scored Iron Nipples and Wrought Iron Bands

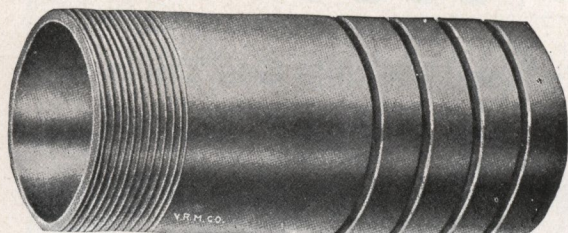


Fig. 3404. Scored Iron Nipple

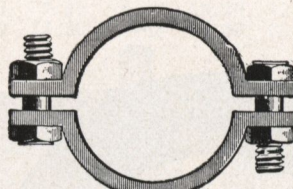


Fig. 3405. Wrought Iron Bolt Band

Scored Iron Nipples

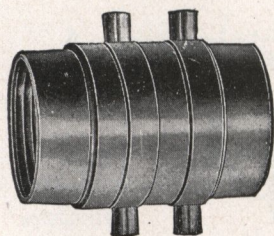
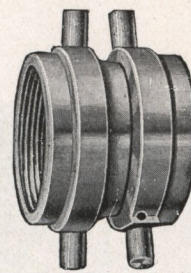
Pipe Size, inches.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$
Length, inches.....	4	5	6	6	6	8	10	10	10
Plain, each.....	.20	.25	.30	.35	.40	.60	1.	1.25	1.50
Galvanized, each.....	.25	.30	.38	.44	.50	.75	1.25	1.57	1.88
Pipe Size, inches.....	4	$4\frac{1}{2}$	5	6	7	8	10	12	12
Length, inches.....	10	10	10	10	10	12	12	15	15
Plain, each.....	2.25	2.75	3.00	4.00	4.50	6.00	10.00	15.00	15.00
Galvanized, each.....	2.80	3.44	3.75	5.00	5.62	7.50	12.50	18.75	18.75

Wrought Iron Bolt Bands

For Large Suction Hose

Internal Diameter of Hose.....	$2\frac{1}{2}$	3	4	5	6	8	10	12
Each.....	2.00	2.20	2.40	2.80	3.20	4.00	4.80	5.60

Hose Appliances

Fig. 3410
Expansion Ring CouplingFig. 3411
Expansion RingFig. 3412
Double Female Coupling

Expansion Ring Hose Couplings

Size.....	1 1/4	1 1/2	2	2 1/2
Per Set.....	3.00	3.00	3.50	4.00

Expansion Rings

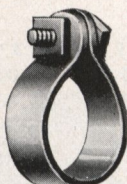
Size.....	1 1/4	1 1/2	2	2 1/2	3
Per dozen....	2.00	2.00	3.00	3.50	4.00

Double Female Couplings

For Connecting Two Male Ends of Hose Couplings

Size, inches.....	1 1/4	1 1/2	2	2 1/2	3
Double Female Couplings, each.....	2.75	3.30	4.40	6.40	15.00

Hose Bands

Fig. 3413
Sherman Hose
ClampFig. 3414
Hose Clamp
Bolt and Nut

Sherman Lawn Hose Clamps

Size Hose.....	1/2	1/2	1/2	3/4	3/4	3/4
Ply Hose.....	2	3	4	2	3	4
Per dozen.....	.60	.60	.60	.60	.60	.60

Sherman Water Hose Clamps

Size Hose..	1	1	1	1 1/4	1 1/4	1 1/2	1 1/2	2	2 1/4	2 1/2	3
Ply Hose...	2	3	4	3	4	3	4	3-4	3-4	3-4	3-4
Per dozen..	2.00	2.00	2.00	2.50	2.50	3.00	3.00	4.00	6.50	7.00	10.00

Sherman Steam Hose Clamps

Size Hose.....	3/4	3/4	1	1	1 1/4	1 1/4	1 1/2	1 1/2	2	2	2 1/2	2 1/2
Ply Hose.....	3	4	3	4	3	4	3-4	5	3-4	5	3-4	5
Per dozen.....	2.00	2.00	2.50	2.50	3.00	3.00	3.50	4.00	5.50	6.50	8.50	9.50

Hose Clamp—Bolt and Nut—Fig. 3414

Size.....	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Per dozen.....	1.50	1.50	2.00	2.50	3.00	4.00	7.00	10.00	24.00	30.00

Hose Nipples and Bushings

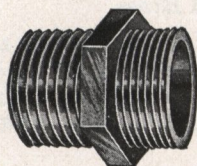


Fig. 3415. Hose Nipple

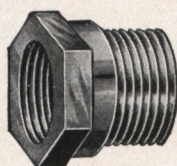


Fig. 3416. Hose Nipple, Male and Female

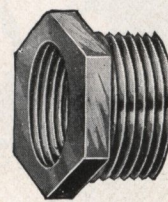


Fig. 3417. Hose Bushing

Brass Hose Nipples

Size.....	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Fig. 3415 and 3416, per dozen.....	3.50	3.50	5.00	9.00	10.00	14.00	28.00	40.00	50.00	75.00

Brass Hose Bushings

Size.....	$\frac{3}{4} \times \frac{1}{2}$	$1 \times \frac{1}{2}$	$1 \times \frac{3}{4}$	$1\frac{1}{4} \times \frac{3}{4}$	$1\frac{1}{4} \times 1$	$1\frac{1}{2} \times \frac{3}{4}$	$1\frac{1}{2} \times 1$	$1\frac{1}{2} \times 1\frac{1}{4}$	$2 \times \frac{3}{4}$	
Per dozen.....	6.50	6.50	6.50	8.00	10.00	11.50	11.50	12.00	13.00	
Size.....	2×1	$2 \times 1\frac{1}{4}$	$2 \times 1\frac{1}{2}$	$2\frac{1}{2} \times \frac{3}{4}$	$2\frac{1}{2} \times 1$	$2\frac{1}{2} \times 1\frac{1}{4}$	$2\frac{1}{2} \times 1\frac{1}{2}$	$2\frac{1}{2} \times 2$	3×2	$3 \times 2\frac{1}{2}$
Per dozen.....	14.00	16.00	18.00	20.00	22.00	23.00	24.00	26.00	30.00	36.00

Brass Hose Reducers

Size.....	1 x 3/4	1 1/4 x 3/4	1 1/4 x 1	1 1/2 x 1 1/4	2 x 1 1/2
Per dozen.....	6.50	10.00	10.00	12.00	18.00
Size.....	2 1/2 x 3/4	2 1/2 x 1	2 1/2 x 1 1/4	2 1/2 x 1 1/2	2 1/2 x 2
Per dozen.....	24.00	26.00	28.00	29.00	30.00

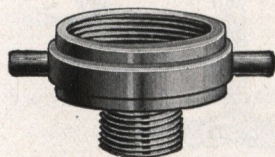


Fig. 3418. Hose Reducer

Hose Caps and Siamese Connections

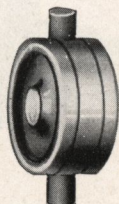


Fig. 3420. Hose Cap, Plain

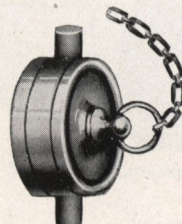


Fig. 3421. Hose Cap with Chain

Hose Caps—Plain

Size, inches.....	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Rough, each.....	.60	.75	1.15	1.50	2.00	2.50	5.00	6.50	8.00
Finished, each.....	.80	1.00	1.50	2.00	2.75	3.25	7.00	8.75	11.00

Hose Caps With Chain

Size, inches.....	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Rough, each.....	.80	1.00	1.50	2.00	2.75	3.25	7.00	8.75	11.00
Finished, each.....	1.00	1.25	1.75	2.25	3.00	3.50	8.00	10.00	12.00

Standard Fire Department Siamese Connections

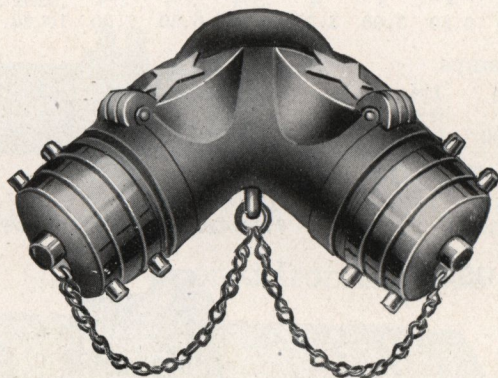


Fig. 3422. Standard Fire Department Siamese Connection

With Swing Checks, Plugs and Chains

The advantage of swing checks is to admit of a second steamer connection without shutting down the first steamer.

These connections with the double checks should be set up with a 45 degree elbow on a vertical stand pipe.

The checks in these connections are not intended to keep the water back from the tank.

Tested to 300 pounds pressure.

Price List—Iron Body and Brass

Size.....	$4 \times 2\frac{1}{2}$	4×3	$6 \times 2\frac{1}{2}$	6×3
Iron Body, Painted.....	15.00	18.00	21.00	24.00
Rough Brass.....	20.00	25.00	30.00	35.00
Polished Brass.....	25.00	30.00	35.00	40.00

Y-Design Siamese Connections

This type of connection is rapidly becoming universally popular, due to its compact form of construction, which permits of its installation in restricted spaces.

Its popularity is also due largely to the fact that while being up to the underwriter regulation, it is also the lowest priced Siamese on the market—quality and workmanship considered.

Price List—Iron Body and Brass

Size.....	$4 \times 2\frac{1}{2}$	4×3	$6 \times 2\frac{1}{2}$	6×3
Iron Body, Painted.....	15.00	18.00	21.00	24.00
Rough Brass.....	20.00	25.00	30.00	35.00
Polished Brass.....	25.00	30.00	35.00	40.00

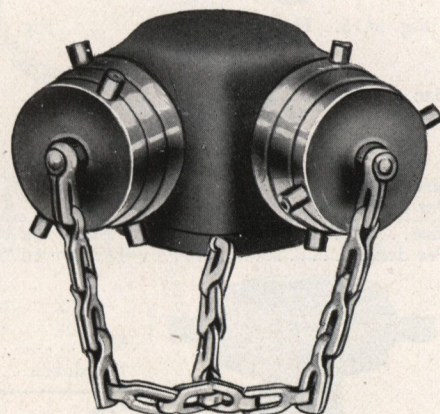


Fig. 3423. Y-Design Siamese Connection

Auto-Sprinkler Siamese Connections

This connection can be furnished in either brass or iron.

It is fully in accordance with underwriters' specifications and approved by them for work in connection with sprinkler systems.

Price List—Iron Body and Brass

Size.....	4 x 2½	4 x 3	6 x 2½	6 x 3
Iron Body, Painted.....	15.00	18.00	21.00	24.00
Rough Brass.....	20.00	25.00	30.00	35.00
Polished Brass.....	25.00	30.00	35.00	40.00

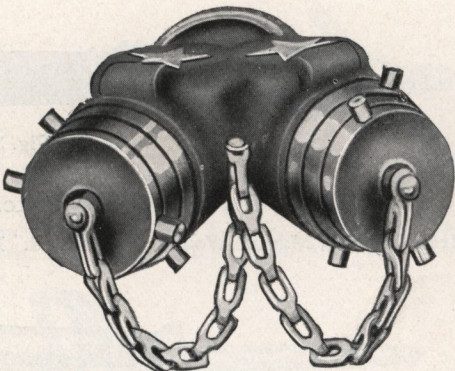


Fig. 3430 Auto-Sprinkler Siamese Connection

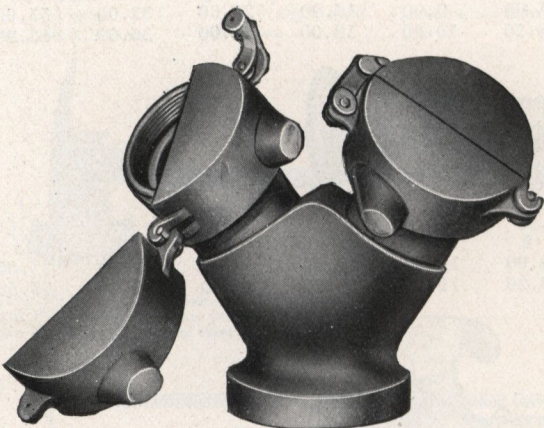


Fig. 3431. Safety Siamese Cap

Safety Siamese Cap

This cap consists of two half sections hinged and held in place by pin and is designed for use over the hose ends of a Siamese Connection. Its object is to prevent tampering, and also to prevent clogging by admittance of foreign matter. It has the endorsement and approval of leading fire authorities for the above reason and from the further fact that by simply releasing the pins connections are instantly ready for use.

Price List

Size Cap for Siamese Connections, inches.....	2½	3
Each	2.00	3.00

Stand Pipe Siamese

With Single Check, Plugs and Chain

These Siamese Connections have one check valve only and can be set in any position and the check will operate correctly.

When used on a vertical pipe they should be set up with a 45 degree elbow.

These Siamese Connections are made in brass, rough body, painted with finished trimmings, finished all over, bronzed to match sample, or any other finish required. Tested to 300 pounds.

Prices on application.

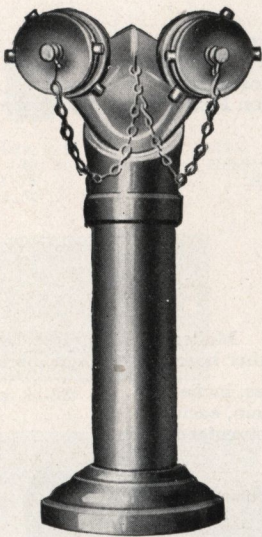


Fig. 3432
Stand Pipe Siamese

Nozzles and Play Pipes

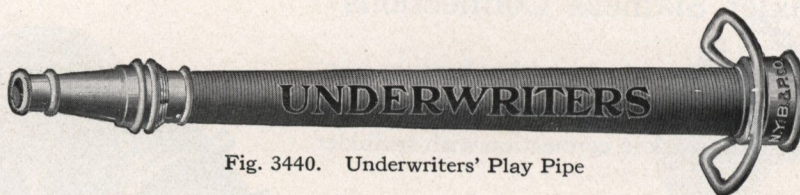


Fig. 3440. Underwriters' Play Pipe

For Factory and Fire Department Service

Metal Handles, Marline Wound and Painted. Price, each..... 10.00

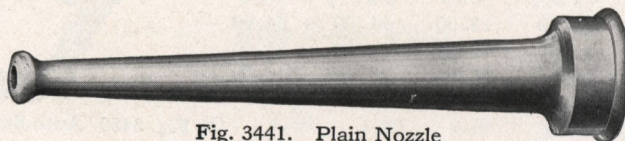


Fig. 3441. Plain Nozzle

Size, inches.....	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Length, inches.....	8	9	10	$10\frac{1}{2}$	11	12
Hose Thread, per dozen.....	7.00	9.00	16.00	20.00	32.00	55.00
Iron Pipe Thread, per dozen.....	8.20	10.20	18.00	24.00	36.00	65.00

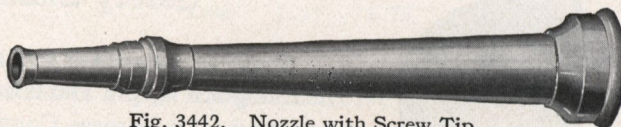


Fig. 3442. Nozzle with Screw Tip

Size, inches.....	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Length, inches.....	8	$9\frac{1}{2}$	11	12	$13\frac{1}{2}$	15
Hose Thread, per dozen.....	8.00	10.00	20.00	25.00	39.00	75.00
Iron Pipe Thread, per dozen.....	9.20	11.20	21.20	27.50	42.00	78.50



Fig. 3443. Cock on Large End

Size, inches.....	$\frac{3}{4}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Length, inches.....	8	12	9	11	12	15	15
Hose Thread, per dozen.....	13.00	18.00	20.00	40.00	55.00	80.00	96.00
Iron Pipe Thread, per dozen.....	14.20	19.20	21.20	41.20	57.50	85.00	105.00

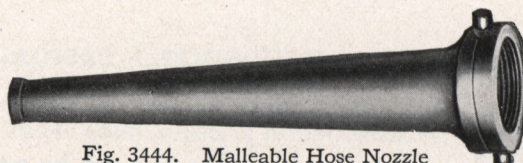


Fig. 3444. Malleable Hose Nozzle

Malleable Iron Hose Nozzles are practically unbreakable and are less likely to be stolen than brass nozzles. Made either hose or iron pipe thread. In ordering specify style thread desired.

Size, inches.....	$1\frac{1}{4}$ x 12	$1\frac{1}{2}$ x 12	2 x 12	$2\frac{1}{2}$ x 12
Plain, each.....	1.50	1.80	2.50	2.90
Galvanized, each.....	2.25	2.70	3.75	4.35

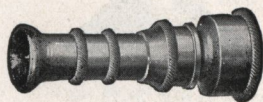


Fig. 3446. Gem Nozzle

Gem Brass Hose Nozzle

Easily Adjustable, Free from Leakage—Throws Solid Stream or Spray

Size, inches.....	$\frac{3}{4}$	1
Per dozen.....	10.00	15.00

Fire Equipment Specialties

Hart Shut-Off Nozzles

New York Fire Department Style.

These Nozzles are made to attach directly to the hose. They are for fire departments preferring short pipes or using hose holders. They are 12 inches long, with 2½-inch connection, requiring no play pipe. Any size of outlet up to and including 1½-inch.

No. 3 Shut-off and solid stream, each 25.00
No. 4 Shut-off, Solid Stream and Spray attachment, each..... 27.50

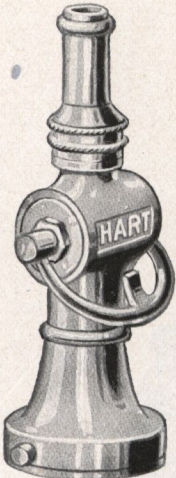


Fig. 3450
No. 3 Hart Nozzle

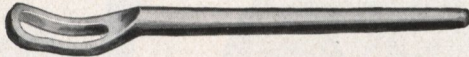


Fig. 3450A. Malleable Spanner
Tinned, per dozen 6.00



Fig. 3450B. Combination Spanner
Per dozen..... 6.00

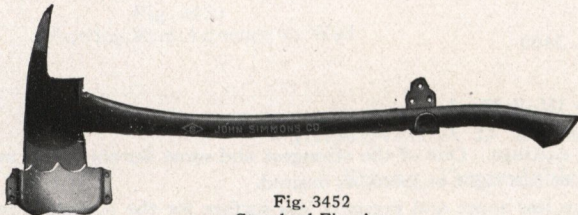


Fig. 3452
Standard Fire Axe

Heavy Pick Back Fire Axe, per dozen 30.00
Light Pick Back Fire Axe, per dozen 24.00
Plain Head Fire Axe, per dozen 24.00

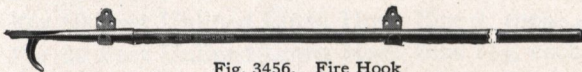


Fig. 3456. Fire Hook

Length Pole, feet..... 6 8 10 12
Each..... 2.50 2.75 3.00 3.50



Fig. 3457. Regulation Steel Crowbar

Painted, each..... 2.00
Nickel-plated, each..... 4.50

Cast Signs

For Stand Pipe and Perforated Pipe Lines and Sprinkler Lines

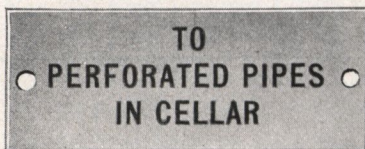


Fig. 3459B

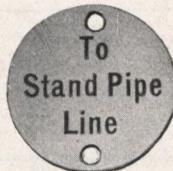


Fig. 3459C
Stock Signs Shown

Finish	Each
Aluminum Bronze..	1.50
Galvanized.....	2.00
Polished Brass.....	3.50

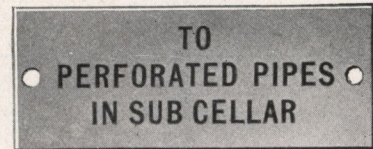


Fig. 3459D

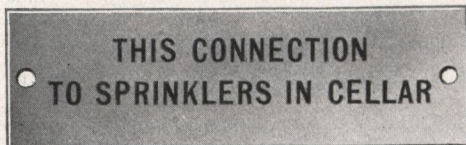


Fig. 3459E

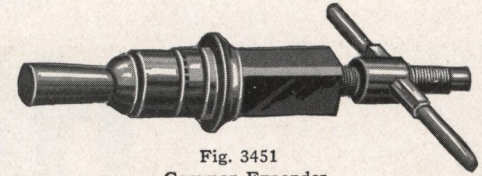


Fig. 3451
Common Expander

For attaching Expansion Ring Hose Couplings

Size.....	¾	1	1¼	1½	2	2½
Each.....	6.00	6.00	7.00	7.00	8.00	8.00

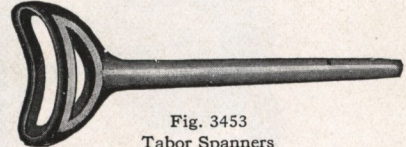


Fig. 3453
Tabor Spanners

List, per dozen..... 6.00

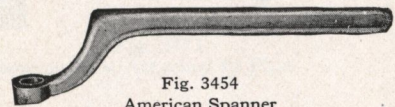


Fig. 3454
American Spanner

List per dozen..... 6.00



Fig. 3455
Play Pipe Holders

Per Set..... .60



Fig. 3455A
Fire Hook Holders

Per Set..... .55

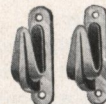


Fig. 3458

Fig. 3458
Crowbar Holders
Per Set..... .50



Fig. 3459. Axe Holders:
Japanned, per set.. .80
Pol. Brass, per set. 1.75
N. P. Brass, per set 2.50

Fig. 3459A
Spanner Holder
Each..... .25

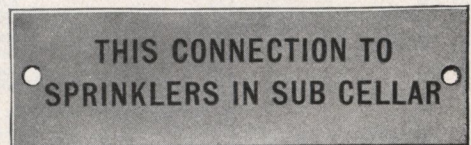


Fig. 3459K

Swinging Wall Reel

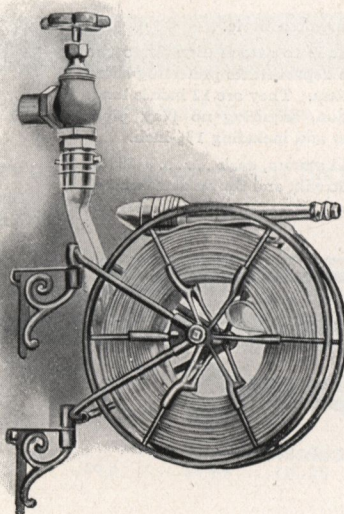


Fig. 3460

Swinging Wall Reel

Made of steel tubing, steel rod and wire, and malleable castings. One of the strongest and most durable reels made. Tension axles are used so that the reel may be adjusted to run tight or loose, as desired.

This reel is strong, serviceable and ornamental; takes up less space and presents less surface for the accumulation of dust than any other.

Will swing at any angle from the wall.

Hose will unwind without a knot or twist.

Made for 200 feet of cotton rubber-lined hose.

The same pipe clamps are used as shown with the hump rack.

Special sizes can be made to order.

Furnished with wall brackets or pipe clamps, as desired.

Finished in Japanned red unless otherwise specified.

Finished in gold or silver bronze without extra charge.

Any size, except No. 8, plated in nickel or copper at an additional cost of 2.00 each, net. No. 8, 2.50. No. 9, 3.50 net. White enamel finish, 50 cents each net, extra. No extra charge for pipe clamps up to and including 4 inches.

Swinging Wall Reel

Number	Size of Hose Inches	Capacity Unlined Linen Feet	Capacity Cotton R. L. Mill Hose Feet	Dimensions		Price
				Width Between Spokes, Inches	Diameter Inches	
0	1 1/4 or 1 1/2	50	...	3	15	6.00
00	2	50	...	3 3/4	15	6.00
000	2 1/2	50	...	4 1/8	15	6.00
0 1/2	1 1/4 or 1 1/2	75	...	3 1/8	17	6.00
00 1/2	2	75	...	4 1/4	17	6.00
000 1/2	2 1/2	75	...	4 5/8	17	6.00
1	1 1/4 or 1 1/2	100	...	3 1/8	21	6.00
2 1/2	2	100	...	4 1/4	21	6.00
3 1/2	2 1/2	100	...	4 3/8	21	6.00
2	1 1/4 or 1 1/2	150	50	3 1/8	26	6.00
3	2	150	50	4 1/4	26	6.00
4	2 1/2	150	50	4 3/8	26	6.50
5 1/2	1 1/4 or 1 1/2	200	...	5 1/2	21	7.00
6 1/2	2	200	...	8	21	7.50
7 1/2	2 1/2	200	...	9	21	8.00
5	1 1/4 or 1 1/2	300	100	5 1/2	26	7.50
6	2	300	100	8	26	8.00
7	2 1/2	300	100	9	26	8.50
8	2 1/2	400	150	9	32	11.50
9	2 1/2	600	200	9	36	15.00

Note: Nos. 5, 5 1/2, 6, 6 1/2, 7, 7 1/2, 8 and 9 are made for two tiers of hose.

List prices include either wall brackets or pipe clamps, the latter not in excess of 4-inch; 5-inch clamps, 35 cents; 6-inch, 50 cents; 7-inch, 65 cents, and 8-inch, 75 cents per pair net extra.

Approved by the Associated Factory Mutual Fire Insurance Companies.

Swinging Hose Reels

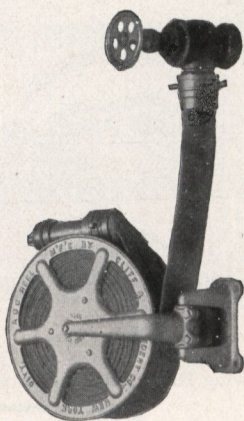


Fig. 3470
Showing Reel Attached to Wall

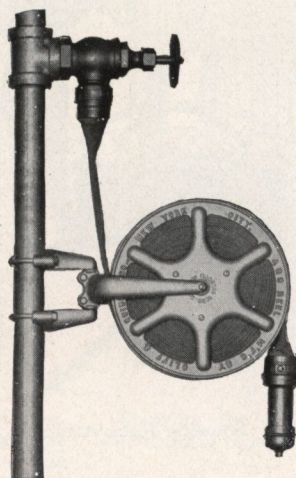


Fig. 3471
Showing Reel Attached to Pipe

Improved A B C Swinging Hose Reels

Strong, Dependable and Ornamental

Aluminum Finish or any Color Enamel, With Wall Plates

A1 For 50 Feet Unlined Linen Hose, Size 1½, each	7.00
A2 For 50 Feet Unlined Linen Hose, Size 2, each	7.00
A3 For 50 Feet Unlined Linen Hose, Size 2½, each	7.00
AA1 For 75 Feet Unlined Linen Hose, Size 1½, each	7.50
AA2 For 75 Feet Unlined Linen Hose, Size 2, each	7.50
AA3 For 75 Feet Unlined Linen Hose, Size 2½, each	7.50
B1 For 100 Feet Unlined Linen Hose, Size 1½, each	8.50
B2 For 100 Feet Unlined Linen Hose, Size 2, each	8.50
B3 For 100 Feet Unlined Linen Hose, Size 2½, each	8.50
C1 For 150 Feet Unlined Linen Hose, Size 1½, each	9.75
C2 For 150 Feet Unlined Linen Hose, Size 2, each	9.75
C3 For 150 Feet Unlined Linen Hose, Size 2½, each	9.75
D1 For 200 Feet Unlined Linen Hose, Size 1½, each	11.00
D2 For 200 Feet Unlined Linen Hose, Size 2, each	11.00
D3 For 200 Feet Unlined Linen Hose, Size 2½, each	11.00
C1 For 50 Feet Rubber-Lined Cotton Mill Hose, Size 1½, each	9.75
C2 For 50 Feet Rubber-Lined Cotton Mill Hose, Size 2, each	9.75
C3 For 50 Feet Rubber-Lined Cotton Mill Hose, Size 2½, each	9.75
D1 For 100 Feet Rubber-Lined Cotton Mill Hose, Size 1½, each	11.00
D2 For 100 Feet Rubber-Lined Cotton Mill Hose, Size 2, each	11.00
D3 For 100 Feet Rubber-Lined Cotton Mill Hose, Size 2½, each	11.00

No extra charge for pipe clamps up to and including 4 inch.

Reels nickel-plated on iron at an additional cost of 3.00 each.

Swinging Hose Racks

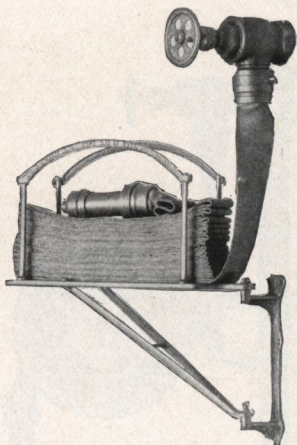


Fig. 3480. Showing Rack Attached to Wall

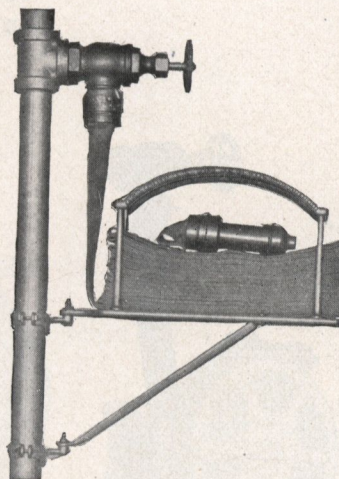


Fig. 3481. Showing Rack Attached to Pipe

Swinging Hose Racks

Aluminum Finish or Any Color Enamel

Figs. 3480, 3481

Number		Size Hose	With Wall Plate or Pipe Clamp Each
X1	For 25 feet Unlined Linen Hose.....	1	5.00
X2	For 50 feet Unlined Linen Hose.....	1	5.00
X3	For 75 feet Unlined Linen Hose.....	1	5.50
X4	For 100 feet Unlined Linen Hose.....	1	6.00
0	Narrow, for 50 feet Unlined Linen Hose.....	1½	5.00
0	For 50 feet Unlined Linen Hose.....	2	5.00
00	For 50 feet Unlined Linen Hose.....	2½	5.00
1	Special Narrow, for 75 feet Unlined Linen Hose.....	1½	5.50
1	Special Narrow, for 75 feet Unlined Linen Hose.....	2	5.50
2	Special Narrow, for 75 feet Unlined Linen Hose.....	2½	5.50
1	Narrow, for 100 feet Unlined Linen Hose.....	1½	6.00
1	For 100 feet Unlined Linen Hose.....	2	6.00
2	For 100 feet Unlined Linen Hose.....	2½	6.00
3	Special Narrow, for 125 feet Unlined Linen Hose.....	1½	6.50
3	Special Narrow, for 125 feet Unlined Linen Hose.....	2	6.50
4	Special Narrow, for 125 feet Unlined Linen Hose.....	2½	6.50
3	Narrow, for 150 feet Unlined Linen Hose.....	1½	7.00
3	For 150 feet Unlined Linen Hose.....	2	7.00
4	For 150 feet Unlined Linen Hose.....	2½	7.00
5	Narrow, for 200 feet Unlined Linen Hose.....	1½	7.50
5	For 200 feet Unlined Linen Hose.....	2	7.50
6	For 200 feet Unlined Linen Hose.....	2½	8.00
3	Narrow, for 50 feet Rubber Lined Cotton Mill Hose.....	1½	7.00
3	For 50 feet Rubber Lined Cotton Mill Hose.....	2	7.00
4	For 50 feet Rubber Lined Cotton Mill Hose.....	2½	7.00
5	Narrow, for 100 feet Rubber Lined Cotton Mill Hose.....	1½	7.50
5	For 100 feet Rubber Lined Cotton Mill Hose.....	2	7.50
6	For 100 feet Rubber Lined Cotton Mill Hose.....	2½	8.00

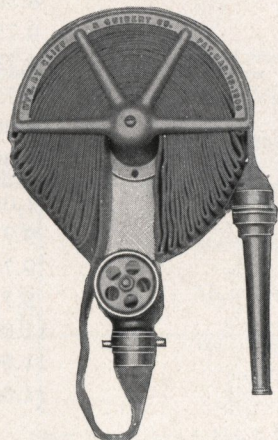


Fig. 3482. Showing Rack Attached to Wall

In ordering Racks with Pipe Clamps always state internal diameter or external circumference of pipe to which Racks are to be attached.

Racks nickel-plated on iron are 3.00 each, net, more than above.

Special quotations for other styles of finish furnished on application.

No extra charge for pipe clamps up to and including 4-inch.

Saddle Rack

These Racks have a capacity for holding, in reasonable length folds, any quantity of unlined linen hose not exceeding 200 feet.

The hubs for these Racks are made in three widths, adapted respectively for 1½, 2 or 2½ inch hose.

In ordering always state size of hose they are wanted for and whether wall plates or pipe clamps are desired.

Racks finished aluminum or any other color enamel, with wall plates or pipe clamps. Price, each..... 5.00

The Royal Hose Rack

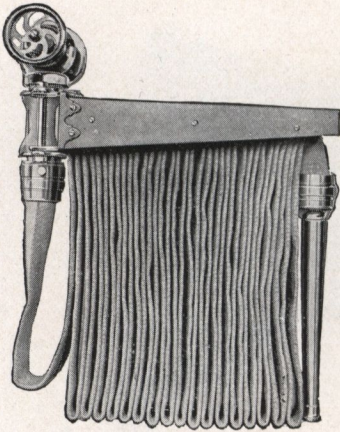


Fig. 3490

Showing the popular Hose Nipple Method of Attachment.

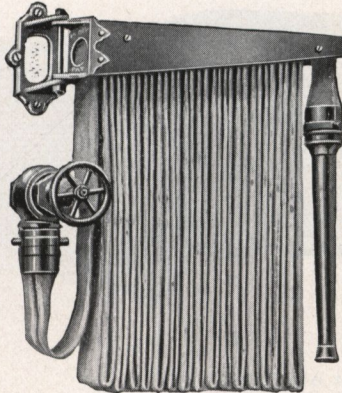


Fig. 3491

Wall Bracket Style of Installation. Permits hose to be raised higher and out of the way, with valve and nozzle within easy reach.

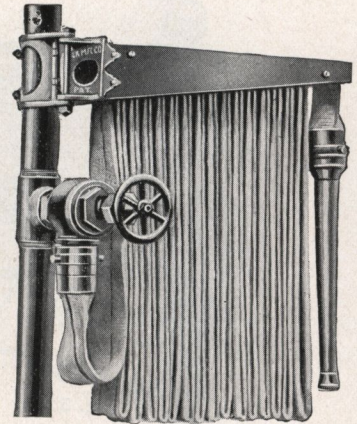
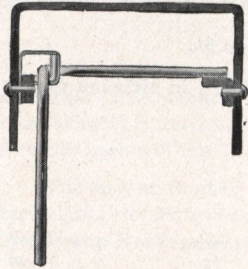


Fig. 3492

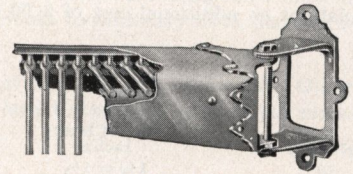
Showing the use of Pipe Clamps where stand pipe is exposed.



Sectional View (front) showing Top, Pins, etc.



Retaining Spring



Sectional View (side) showing Top, Pins, etc.

Royal Hose Racks

The Royal Rack is operated by first opening the valve and then pulling off the hose in the desired direction. It drops each loop in succession and when the last one falls the water is released and flows through the hose, eliminating the old method of first laying out the hose, then opening the valve and finally running back to the nozzle. It saves two-thirds the time formerly required. The hose is empty until straightened out and is easily handled. The operator has complete control of the nozzle when the water arrives and is not endangered by it threshing about when under high pressure.

Obviates the danger of flooding the building should the valve be opened maliciously. The water is held back until the hose is fully removed, and even under high pressure it cannot force the hose off the rack and then run through and cause damage. The water is held under control because as soon as it fills the loop nearest the valve the hose opens out under the pin on which it is hanging and forces it toward the cover of the rack. The fold in the hose is clamped between the pin and the cover, thus closing the waterway until this loop is pulled down by the operator.

The Royal has a covered top, which prevents dust and dirt from accumulating on the hose and rotting the linen fibers. The pins are rust proof and of such large diameter that the hose folds over them in natural bends without pinching. There is ample space between the pins, and the hose hangs in loose folds, permitting free ventilation and preventing mildew. Pins are permanently attached and do not fall to the floor when hose is removed. Construction is pressed steel and malleable iron.

List prices include wall brackets or pipe clamps, the latter not in excess of 4-inch. 4½-inch, .25; 5-inch, .30; 6-inch, .35 each net, extra. Plain Pipe Nipples in same finish as racks, furnished without extra charge. Hose thread nipples extra. Nipples are only furnished when ordered. Racks furnished in red finish, with Wall Brackets, if not otherwise specified.

List Prices and Capacities

Capacity.....	25 to 75 Feet			100 to 150 Feet		
Size of Hose.....	1½	2	2½	1½	2	2½
Number.....	18X	18Y	18Z	19X	19Y	19Z
Japanned Red, Gold, Copper or Aluminum Bronze on Steel.....	5.00	5.00	5.00	6.00	6.00	6.00
Nickel-plated on Steel.....	7.00	7.00	7.00	8.00	8.00	8.00
Solid Brass, Polished or Nickel-plated.....	11.00	11.00	11.00	13.00	13.00	13.00
White Enamel on Steel.....	6.00	6.00	6.00	7.00	7.00	7.00

Angle Iron Hose Rack

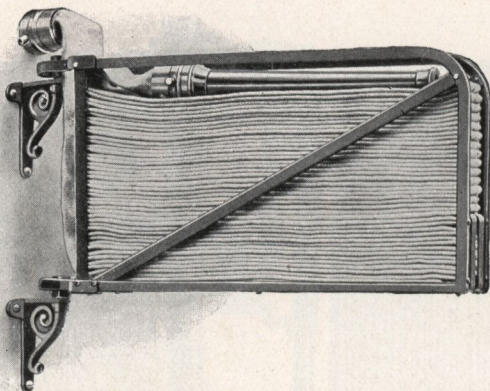
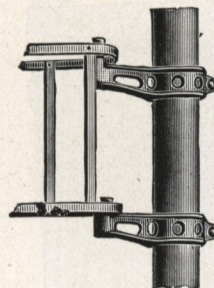


Fig. 3500. Bracket Attachment



Pipe Clamp

Angle Iron Rack

This Rack is neatly designed, and being constructed of angle iron, its strength and durability cannot be questioned. The end or front of the rack is partially closed, making it necessary for the bottom folds to be drawn off, thereby preventing the entire length of hose from falling to the floor in a tangled mass.

In ordering, specify size, kind and length of hose. If with clamps, state size pipe clamps are to fit. Japanned red, unless otherwise specified. Furnished with brackets unless clamps are ordered.

We can supply any of the following sizes in gold or aluminum bronze at the same figures; finished in nickel or copper plate at an additional cost of 2.00 each, net.

Angle Iron Racks

Number	Size of Hose Inches	Capacity Unlined Linen Feet	Capacity Cotton Mill Hose Feet	Height	Length	Price
70	1¼ or 1½	50	...	11	22	5.00
71	2	50	...	11	22	5.00
72	2½	50	...	11	22	5.00
70X	1¼ or 1½	75	...	14	22	5.50
70Y	2	75	...	14	22	5.50
70Z	2½	75	...	14	22	5.50
73	1¼ or 1½	100	25	16	24	6.00
74	2	100	25	16	24	6.00
75	2½	100	25	16	24	6.00
76	1¼ or 1½	150	50	23	28	7.00
77	2	150	50	23	28	7.00
78	2½	150	50	23	28	7.00
79	1¼ or 1½	200	100	34	34	7.50
80	2	200	100	34	34	7.50
81	2½	200	100	34	34	8.00

For 1-inch hose 70, 70X, 73, 76 and 79 can be specially made without extra charge.

List prices include either wall brackets or pipe clamps, the latter not in excess of 4-inch; 5-inch, 35 cents; 6-inch, 50 cents; 7-inch, 65 cents, and 8-inch, 75 cents per net extra.

Notice: To avoid mistakes, and to get the proper rack when your order, give size, kind and length of hose. When you order racks with pipe clamps, be sure to give size of pipe they are to fit. If not standard size pipe, you must give the outside diameter.

Approved by the Associated Factory Mutual Fire Insurance Companies.

Swinging Hose Rack

No.	Size Hose Inches	With Wall Plate or Pipe Clamp
O1 for 25 Feet Unlined Linen Hose.....	1½	5.00
O2 for 25 Feet Unlined Linen Hose.....	2	5.00
O3 for 25 Feet Unlined Linen Hose.....	2½	5.00
A1 for 50 Feet Unlined Linen Hose.....	1½	5.00
A2 for 50 Feet Unlined Linen Hose.....	2	5.00
A3 for 50 Feet Unlined Linen Hose.....	2½	5.00
AA1 for 75 Feet Unlined Linen Hose.....	1½	5.50
AA2 for 75 Feet Unlined Linen Hose.....	2	5.50
AA3 for 75 Feet Unlined Linen Hose.....	2½	5.50
B1 for 100 Feet Unlined Linen Hose.....	1½	6.00
B2 for 100 Feet Unlined Linen Hose.....	2	6.00
B3 for 100 Feet Unlined Linen Hose.....	2½	6.00

Racks furnished with aluminum or any color enamel.

In ordering racks with pipe clamps always state internal diameter or external circumference of pipe to which racks are to be attached.

Racks nickel-plated on iron are 3.00 each, net, more than above. Special quotations for other styles of finish furnished on application.

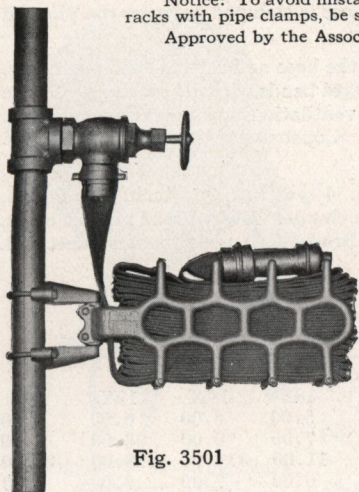


Fig. 3501

The Hump Swinging Hose Rack

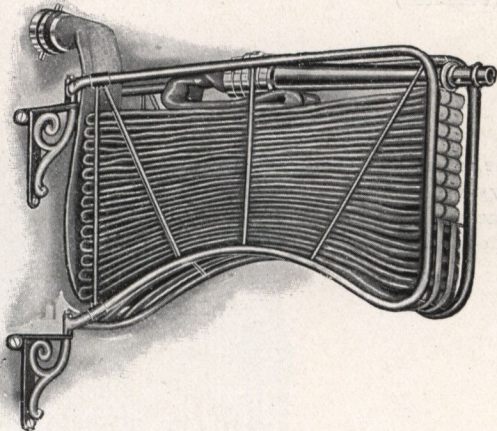
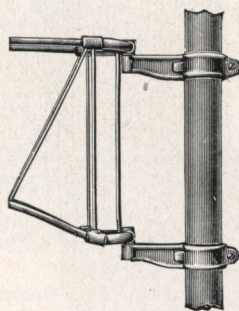


Fig. 3510
Hump Rack, Showing Bracket Attachment



Showing Pipe Clamps
No extra charge for pipe clamps
up to and including 4-inch

These Racks are japanned red, unless otherwise specified. Bronzed, gold or aluminum without extra cost. There are twenty-five breaks or folds in a fifty-foot length of hose. On a straight flat bottom these breaks are sharp; on a bottom that is higher in the center than at the ends, the weight is taken off the ends, and these breaks become easy folds, and therefore the hose will not break at folds when run off.

The end, or front of the Rack is partially enclosed in order that at least five folds of hose must be drawn off. Other racks have the entire end open, and a sudden jerk will often pull the entire length of hose to the floor in a tangled mass. The Hump Racks are attached to wall brackets or pipe clamps at the top and bottom.

Hump Rack

We can supply any of the following sizes in gold or aluminum bronze at the same figures; finished in nickel or copper plate at an additional cost of 2.00 each, net.

Number	Size of Hose Inches	Capacity Unlined Linen Feet	Capacity Cotton Mill Hose Feet	Height Inches	Length Inches	Price
A0	1¼ or 1½	50	...	11	22	5.00
A0X	2	50	...	11	22	5.00
A00	2½	50	...	11	22	5.00
A075	1¼ or 1½	75	...	14	22	5.50
A0X75	2	75	...	14	22	5.50
A0075	2½	75	...	14	22	5.50
A1	1¼ or 1½	100	25	16	24	6.00
A1X	2	100	25	16	24	6.00
A2	2½	100	25	16	24	6.00
A3	1¼ or 1½	150	50	23	28	7.00
A3X	2	150	50	23	28	7.00
A4	2½	150	50	23	28	7.00
A5	1¼ or 1½	200	100	34	34	7.50
A5X	2	200	100	34	34	7.50
A6	2½	200	100	34	34	8.00

For 1-inch hose, A0, A075, A1, A3 and A5 can be specially made without extra charge.

Furnished with wall brackets unless otherwise specified.

List prices include either wall brackets or pipe clamps, the latter not in excess of 4-inch; 5-inch, 35 cents; 6-inch, 50 cents; 7-inch, 65 cents, and 8-inch, 75 cents per pair net extra.

Notice: To avoid mistakes, and to get the proper rack when you order, give size, kind and length of hose. When you order racks with pipe clamps, be sure to give size of pipe they are to fit. If not standard size pipe, you must give the outside diameter. Always use the letter "A" with number of rack.

Crown Swinging Hose Rack

(Patented)

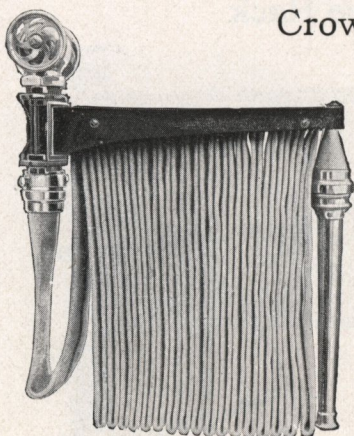
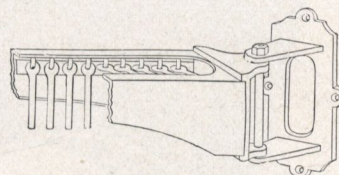


Fig. 3520

Attachment to Nipple Below Valve

Frame of best quality grey iron; clamps, wall brackets and pin connection, malleable.



Sectional View

We are offering to the trade a new Hose Rack, specially designed for unlined linen hose, embodying new features. The hose is hung on galvanized metal pins, which swing free as each lap of hose is withdrawn, yet are permanently attached to the Rack, ready for immediate use when it is desired to replace the hose.

These pins are made with an oval face, thus being adapted to the natural shape of the fold, and being $\frac{3}{8}$ -inch in width, it will be seen that the breaking of the hose at the folds is prevented, and the life and usefulness of the hose very considerably increased. The fact that these pins are perfectly galvanized removes all danger or corrosion.

Another feature of this Rack is its adjustability, it being so constructed that it can be changed in width to accommodate hose varying from 1-inch to $2\frac{1}{2}$ -inch diameter.

These Racks may be attached to the wall, to the stand-pipe, or, by means of a nipple, direct to the valve.

No. 15. 25 to 75 Feet Unlined Linen Hose.

No. 16. 100 to 150 Feet Unlined Linen Hose.

Finish	No. 15	No. 16	Finish	No. 15	No. 16
Japaned Red on Iron.....	5.00	6.00	Verde Antique on Iron.....	8.00	9.00
Gold, Copper or Alum., Bronze on Iron..	5.00	6.00	Solid Brass, Polished.....	11.00	13.00
White Enamel on Iron.....	6.00	7.00	Solid Brass, Nickel-plated.....	11.00	13.00
Nickel or Copper Plate on Iron.....	7.00	8.00	Solid Brass, Verde Antique.....	12.00	14.00

In ordering, state hose diameter, and whether wanted with wall plates or pipe clamps, and if latter, state size. Will be shipped with wall brackets and red enamel finish, unless ordered otherwise.

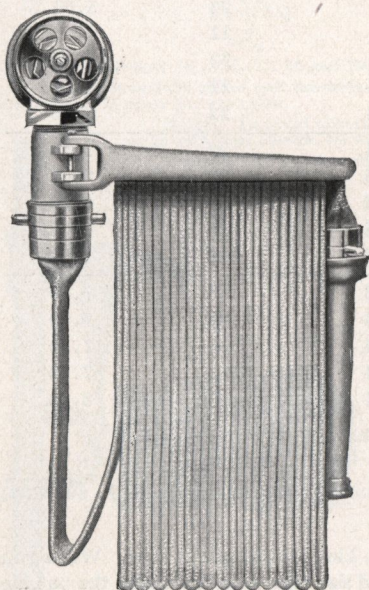


Fig. 3521. Regal Hose Rack

Regal Hose Rack

This rack is strong and very ornamental. The pins drop instantly as the hose is withdrawn, but remain securely fastened to the rack, ready for the replacement of the hose.

The first support locks the hose in the rack and prevents the accidental displacement of the hose, a common occurrence where hose is hung vertically.

Price List

For iron racks, finished aluminum or any color enamel.

Racks to hold 25 to 50 feet of Linen Hose.....	5.00
Racks to hold 75 to 100 feet of Linen Hose.....	5.50

Prices in polished or nickel-plated brass furnished on application.

When ordering, state number of feet and size of hose to be used, and whether wall plates, pipe clamps or nipples will be required. If pipe clamps, state diameter of pipe. If nipples, state thread (outside diameter and number of threads per inch) or send us a sample of thread required.

Howard Hose Racks

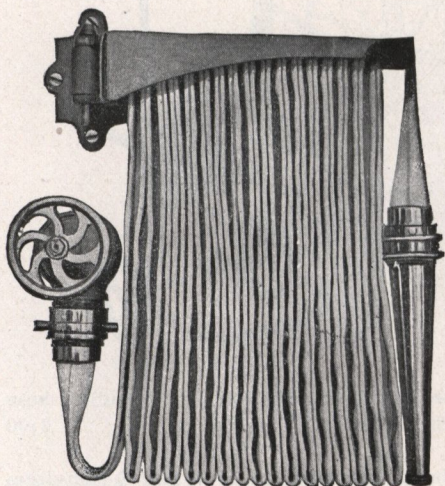


Fig. 3530. Attached to Wall

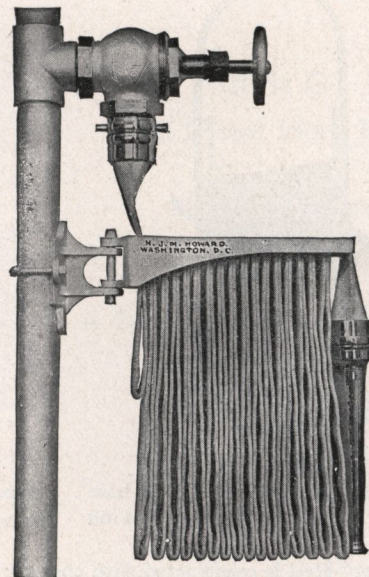


Fig. 3531. Attached to Stand Pipe

In Fig. 3530 the loops of hose being supported on wood pins, the hose does not come in contact with any metal. In this type the pins are shed from the rack as the hose is drawn off. In folding up the hose for installation on the rack it is not necessary to make a fixed number of loops, for, as the rack has sliding supports, the loops of hose can be pressed close together, making it possible to get on two or three extra loops of hose if necessary.

Fig. 3531 is also a wood pin type of rack, and is frequently used where the stand pipe is exposed, and the racks may be attached to the stand pipe either above or below the valve. When ordering racks to be attached to stand pipe the size of the latter should be given.

Price List
All Styles of Hose Racks

Size.....	No. 1	No. 2	No. 3
For Holding Cotton Rubber-lined Hose, feet...	50	100	150
For Holding Underwriters' Linen Hose, feet...	50	100	150
Iron Racks, Japanned in any color, each.....	5.00	6.00	7.00
Iron Racks, Bronzed with Aluminum, each.....	5.00	6.00	7.00
Iron Racks, Bronzed with Gold, each.....	5.00	6.00	7.00
Iron Racks, Enameled White.....	6.00	7.00	8.00
Iron Racks, Nickel-plated, each.....	7.00	8.00	9.00
Iron Racks, Oxidized, each.....	7.00	8.00	9.00
Brass Racks, Nickel-plated, each.....	11.00	13.00	15.00
Brass Racks, Polished, each.....	11.00	13.00	15.00
Brass Racks, Oxidized, each.....	11.00	13.00	15.00
Solid Aluminum Racks, Polished, each.....	11.00	13.00	15.00

Special finishes to order.

Fig. 3532. Hose Rack

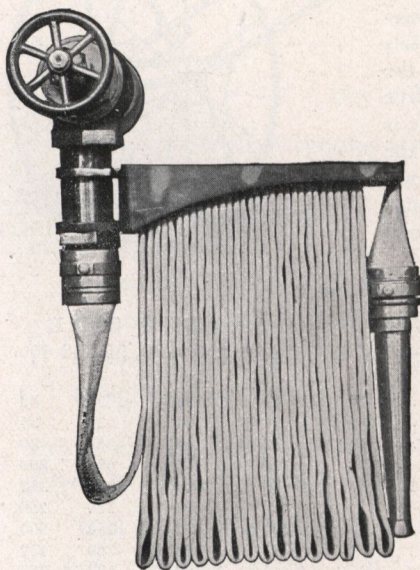


Fig. 3532. Swiveled on Nipple

This is a popular type of Wood Pin Rack, in which the rack is swiveled on the nipple.

This permits a more compact form of construction, does away with an extra joint and brings the rack closer to the valve. It also permits the rack to lie flush against the wall on either side of the valve. These are advantages which add greatly to the appearance of the outfit.

All Metal Tubular Frame Garden Hose Reels

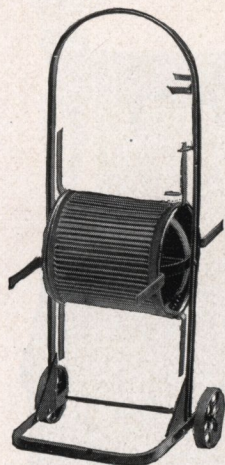


Fig. 3540. Victor

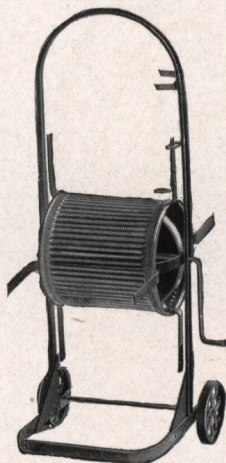


Fig. 3541. Liberty

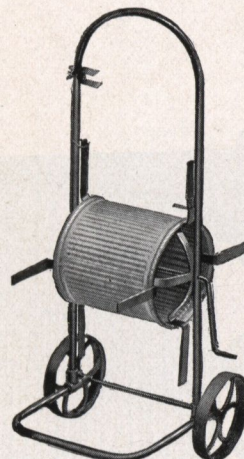


Fig. 3542. No. 2

Capacity 100 feet $\frac{3}{4}$ -inch rubber hose
Each..... 1.60

Capacity 100 feet $\frac{3}{4}$ -inch rubber hose
Each..... 1.90

Capacity 100 feet $\frac{3}{4}$ -inch rubber hose
Each..... 2.00

"Victor" Reel is constructed with channel steel frame, strong cast iron wheels, solid steel reel arms and 9-inch drum of heavy corrugated steel. Equipped with ring on side of frame to prevent, when desired, the reel from unwinding, and with adjustable clip at top of frame for holding nozzle when spraying. Frame enameled green, wheels and reel black.

"Liberty" Reel is same construction, except that it is equipped with a crank for winding on the hose.

No. 2 Reel is constructed entirely of metal. Best tubular steel in frame, cast iron wheels, 7-inch diameter, solid steel reel arms and heavy galvanized iron drum, 9 inches diameter, which prevents injury to hose from tight winding. Corrugations allow air circulation and prevent mildew. Equipped with crank for winding and adjustable hose holder for spraying. Frame enameled green, wheels and reel arms black. The No. 2 is an exceptionally strong and serviceable reel.

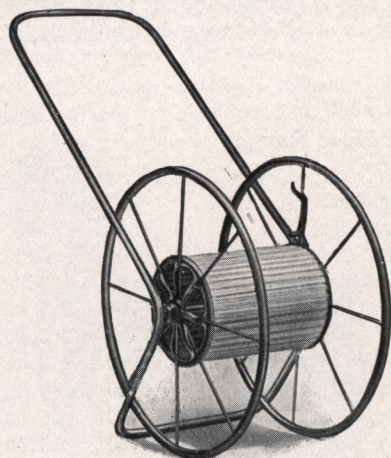
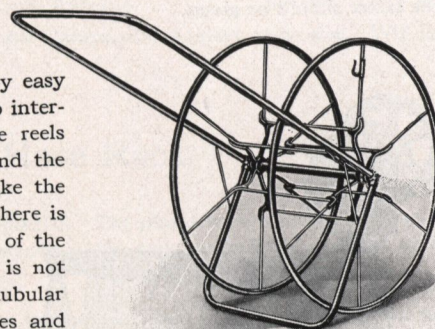


Fig. 3543. Style B Sizes Nos. 10 and 20

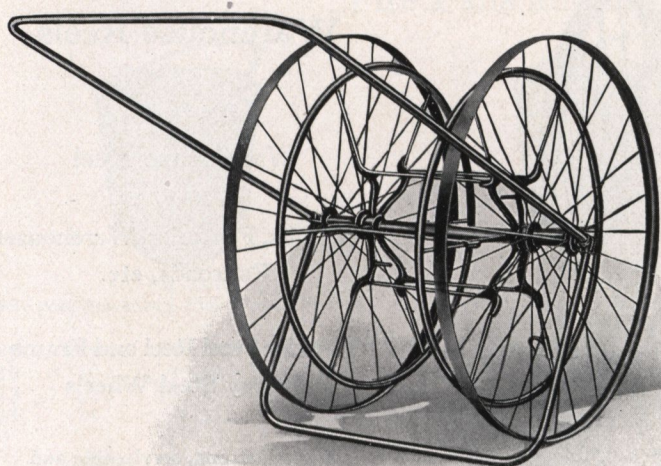
Style B Reels

The reeling and unreeling is very easy and there are no exposed spokes to interfere with either operation. These reels cannot tip over when unreeling and the large rims forming the wheels make the reels very easy to move about. There is no weight to carry, as the weight of the hose is borne upon the rims and is not carried on the handle. All metal tubular steel rims and frame, steel spokes and malleable iron castings.

Nos. 10 and 20 have corrugated galvanized drum; frame and reel enameled green. Nos. 30, 35 and 40 are enameled red.

Fig. 3544. Style B
Sizes Nos. 30, 35 and 40

Number of Reel.....	10	20	30	35	40
Height of Reel in inches.....	21	24	29	32	34
Weight of Reel, in pounds, bundled for shipping.....	20	22	35	52	80
Capacity of 3-ply $\frac{3}{4}$ -inch Rubber Hose, feet.....	100	150	400	600	800
Capacity of 4-ply 1-inch Rubber Hose, feet.....	50	75	150	200	300
Capacity of 4-ply 1 $\frac{1}{4}$ -inch Rubber Hose, feet.....	...	...	100	150	250
Capacity of 1 $\frac{1}{4}$ -inch Cotton Rubber-lined Hose, feet.....	...	100	200	350	500
Capacity of 1 $\frac{1}{2}$ -inch Cotton Rubber-lined Hose, feet.....	...	75	150	250	400
Capacity of 2-inch Cotton Rubber-lined Hose, feet.....	...	...	100	200	300
Price (Nos. 10 and 20 galvanized add 1.75 to list price).....	3.50	4.00	6.50	12.00	25.00



All Metal Hose Reels

Style C

All Metal Hose Reel

For Parks, Lawns
Greenhouses, etc.

A Tubular Steel Reel and Frame
mounted on steel
wheels

Fig. 3550. Style C. All Metal Park Reel

Number of Reel.....	21	31	32
Height of Wheels, inches.....	28	34	38
Outside Width Over All, inches.....	26	27	38
Weight of Reel, Bundled for Shipping, pounds.....	40	50	100
Capacity of $\frac{3}{4}$ -inch 3-ply Rubber Hose, feet.....	200	500	800
Capacity of 1-inch 4-ply Rubber Hose, feet.....	100	200	350
Capacity of $1\frac{1}{4}$ -inch 4-ply Rubber Hose, feet.....	75	150	250
Capacity of $1\frac{1}{4}$ -inch Cotton Rubber-lined Hose, feet.....	150	300	500
Capacity of $1\frac{1}{2}$ -inch Cotton Rubber-lined Hose, feet.....	100	200	350
Capacity of 2-inch Cotton Rubber-lined Hose, feet.....	75	150	250
Capacity of $2\frac{1}{2}$ -inch Cotton Rubber-lined Hose, feet.....	50	100	200
Price.....	7.50	10.50	25.00

Style Z Hotel Reel

Frame and reel of tubular steel, mounted on rubber tired wheels and rubber cushioned braces.

A convenient apparatus for distributing hose in hotels, office and other buildings.

Capacity, 100 feet $2\frac{1}{2}$ -inch cotton rubber-lined hose.

Diameter of reel, 24 inches.

Diameter of wheels, 10 inches.

Weight, 35 pounds.

Price, with Axe and Holders..... 30.00

Price, without Axe and Holders..... 25.00

This reel can be equipped with a large drum to accommodate armored or heavy walled vacuum hose.

Quoted on application.

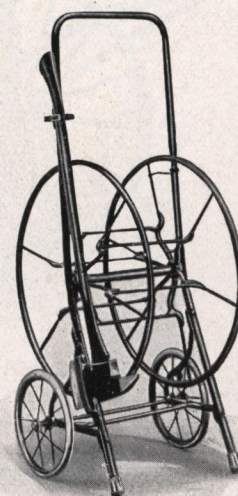


Fig. 3551
Style Z Hotel Reel

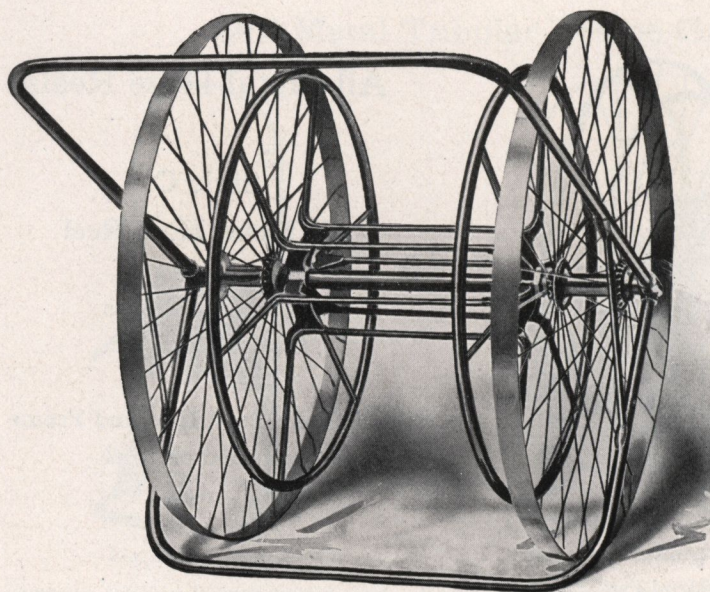


Fig. 3560. Style D Warehouse Reel

Warehouse Reels

Style D
Warehouse Reel

For Mills, Factories, Warehouses
Railroads, etc.

Tubular Steel Reel and Frame
Heavy Steel Wheels

A good, strong, serviceable and
compact reel, requiring a minimum
amount of floor space

Number of Reel	41	51	61
Height of Wheels, inches	42	48	52
Extreme Width Over All, inches	38	46	52
Weight of Reel, Bundled for Shipping, pounds	150	185	200
Capacity of 1½-inch 4-ply Rubber Hose, feet	250	400	500
Capacity of 2-inch 4-ply Rubber Hose, feet	200	300	400
Capacity of 2½-inch 4-ply Rubber Hose, feet	150	250	300
Capacity of 1½-inch Cotton Rubber-lined Hose, feet	500	650	800
Capacity of 2-inch Cotton Rubber-lined Hose, feet	350	500	600
Capacity of 2½-inch Cotton Rubber-lined Hose, feet	250	400	500
Price	35.00	45.00	55.00

Street Cleaning Can and Bag Carriers

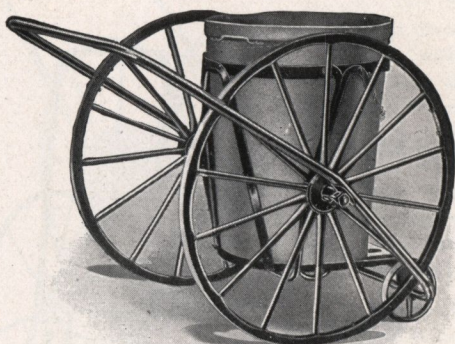


Fig. 3561. Carrier with Wood Wheels

Without Can, each	15.00
Cans, extra, each	4.00



Fig. 3562. Carrier with Steel Wheels

Without Can, each	12.50
Cans, extra, each	4.00

These carriers are designed for use with either cans or bags, in connection with street cleaning operations, and in factories mills, etc.

The frame of the carrier is of tubular steel and passes outside the main wheels, serving as a protection against danger of collision or other accident on the street. Platform is low, permitting the easy removal of the filled receptacle.

Furnished either with or without can or bag, as required.

Fire Pails and Extinguishers



Fig. 3570

Fire Pail, Galvanized, Plain Round Bottom



Fig. 3571

Fire Pail, Galvanized, Round Bottom Painted Red Outside



Fig. 3572

Fire Pail, Galvanized, Flat Bottom Painted Red Outside

No.	Quarts	Size, Inches	Per Dozen	No.	Quarts	Size, Inches	Per Dozen	No.	Quarts	Size, Inches	Per Dozen
210	10	9 3/4 x 10 1/2	7.45	310	10	9 3/4 x 10 1/2	8.60	110	10	10 1/2 x 8 3/4	7.10
212	12	10 1/2 x 10 3/4	7.95	312	12	10 1/2 x 10 3/4	9.10	112	12	11 x 10	7.65
214	14	11 x 12	8.80	314	14	11 x 12	9.90	114	14	11 1/2 x 10 1/2	8.50

Standard Fibre Fire Pails



Fig. 3573. Fibre Fire Pail

	Depth Inches	Diameter Top Inches	Capacity About	Per Dozen
Star Fire Pails.....	8 1/2	11	10 Qts.	18.00
Round Bottom Fire Pails.....	11	11	12 Qts.	24.00
Railroad or Factory Fire Pails.....	11	11	14 Qts.	25.20
Deep Fire Pails.....	13	8	10 Qts.	21.60

All packed one-half dozen in crate.

Hooks for Deep Fire Pails, complete with screws, per dozen..... 4.00

Shelves for Round Bottom Pails, plain, with brackets and screws:

For two pails, each..... 1.60 For three pails, each..... 2.00

Oval Covers, per dozen..... 8.00 Flat Covers, per dozen..... 12.00

Galvanized Water Pails

Number.....	82	102	122	142	162	182
Size, inches.....	9 3/8 x 8 1/2	10 1/2 x 8 1/4	11 x 10	11 1/2 x 10 1/4	11 1/2 x 10 7/8	12 1/4 x 11 1/4
Per Dozen.....	4.95	5.60	6.15	6.90	8.35	9.20

Bucket Tanks and Extinguishers



Fig. 3575

Safety Fire Bucket Tank

No. 1, 31 x 15 1/2 inches, 25 gallons capacity, six 10-quart buckets, each including chemical..... 16.00

No. 2, 34 x 18 1/2 inches, 40 gallons capacity, six 14-quart buckets, including chemical..... 18.00

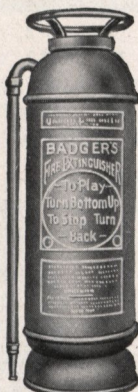


Fig. 3576

Badger Fire Extinguisher

Copper, 24 inches high, 2 1/2 gallons capacity. List price, 20.00



Fig. 3577

J. M. Fire Extinguisher

Effective against any fire—gasoline, oil or electrical.

Including Bracket, each... 16.00



Fig. 3574

Galvanized Water Pail



Fig. 3578

Pyrene Fire Extinguisher

Brass, with Bracket, each... 20.00

Nickel-plated with Bracket, each..... 21.00

Liquid, per quart..... 1.50

One gallon, in one, two or 4 quart cans..... 5.00

Holsters for use by firemen, etc. for carrying Pyrene..... 1.50

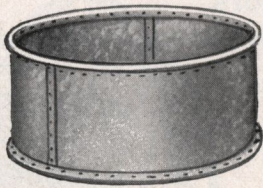


Fig. 3580. Round Galvanized Tank

Galvanized Tanks

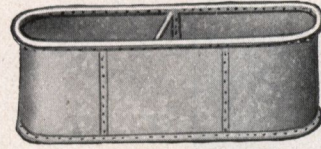


Fig. 3581. Round End Galvanized Tank

Round Tanks, Fig. 3580

No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Diameter, feet....	3	4	4	4	4	4	4	4	5	5	5	5	5
Height, feet.....	2	2	2½	3	4	5	6	8	2	2½	3	4	5
Capacity, gallons .	91	166	215	254	338	423	508	688	262	342	411	548	675
Weight, pounds....	69	97	106	115	145	168	191	220	129	141	154	181	211
No. 20 Gauge, each	18.00	22.00	25.00	28.00	33.00	38.00	44.00	56.00	29.00	32.00	35.00	42.00	51.00

No.	14	15	17	18	19	20	21	21½	22	23	24	25
Diameter, feet....	5	5	6	6	6	6	6	7	8	8	10	10
Height, feet.....	6	8	2	2½	3	4	5	2	2	2½	2	2½
Capacity, gallons .	810	1096	384	480	583	768	966	486	691	864	1089	1361
Weight, pounds....	240	285	167	184	193	237	256	206	245	270	340	370
No. 20 Gauge, each.....	58.00	72.00	37.00	40.00	43.00	52.00	60.00	43.00	56.00	60.00	78.00	84.00

Any of the above Tanks can be shipped in a box car set up ready for use, excepting Nos. 22, 23, 24 and 25, which are shipped knocked down, unless we are otherwise instructed. Any Tank can be shipped knocked down if required.

Round End Tanks, Fig. 3581

No.	101	102	103	104	105	106	107	107L	107M	107N	108
Width, feet.....	2	2	2	2	2	2	2	2½	2½	3	2½
Height, feet.....	2	2	2	2	2	2	2½	2	2	2	2
Length, feet.....	4	5	6	7	8	10	8	5	6	6	8
Capacity, gallons .	91	117	144	170	197	250	246	145	178	213	245
Weight, pounds....	74	88	102	121	135	166	151	93	110	134	141
No. 20 Gauge, each.....	18.00	21.00	23.00	26.00	28.50	36.00	30.00	24.00	26.00	30.00	32.00

No.	109	111	112	116	117	118	120	127	129	130	131
Width, feet.....	2½	3	3	4	4	4	4	5	6	6	6
Height, feet.....	2	2	2	2	2	2	2	2	2	2	2
Length, feet.....	10	8	10	8	10	12	16	18	8	10	16
Capacity, gallons .	312	295	384	386	496	606	826	1072	550	813	1218
Weight, pounds....	177	156	185	169	203	243	320	375	215	262	427
No. 20 Gauge, each.....	38.00	34.00	39.00	37.00	46.00	58.00	75.00	80.00	55.00	61.00	90.00

All the above sizes of Round End Tanks are shipped set up ready for use.

All list prices are based on tanks made from No. 20 Gauge Galvanized Steel with black trimmings. For all Galvanized trimmings add 10 per cent to regular lists. Tanks will be furnished in heavier gauges at the following advances:

No. 18 at an advance of 30 per cent.

No. 16 at an advance of 60 per cent.

No. 14 at an advance of 90 per cent.

No. 12 Gauge will be quoted on application.

Prices do not include tapping tanks for pipe, but holes will be cut in tanks for pipe without extra charge. Locknut and nipple or threaded flange connections, when specified in orders, will be furnished at a small extra charge. Orders must be specific as to size of theappings and their location.

Any of the tanks listed can be furnished knocked down when desired.

The dimensions of all tanks are outside measurements overall.

Capacities are based on the inside measurements and are intended to be exact.

The weights listed for these tanks are guaranteed to be approximately correct.

Every tank is guaranteed to be built in a workmanlike manner.

Tanks and Covers

Wood Tanks

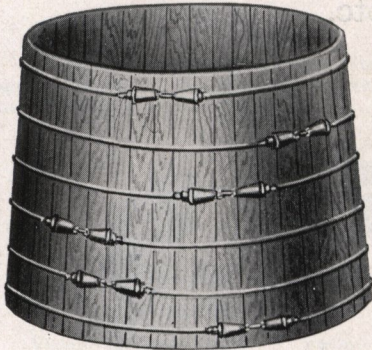


Fig. 3590. Wood Tank

Specifications and prices will be submitted for wood tanks on receipt of details as to kind of wood, approximate dimensions or capacity, style of hoops, whether round or flat, plain or galvanized, and style of cover, if required.

Galvanized Steel Tank Covers

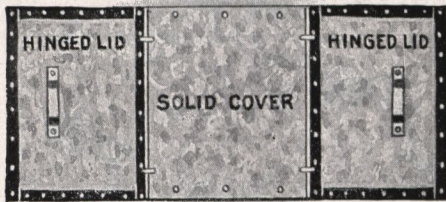


Fig. 3591. Style E

List Price, 40 cents per Square Foot. For Square or Round End Galvanized Tanks



Fig. 3592. Style D

List Price, 40 cents per Square Foot. For Square or Round End Galvanized Tanks



Fig. 3593. Style F

List Price, 40 cents per Square Foot. For Square or Round End Galvanized Tanks

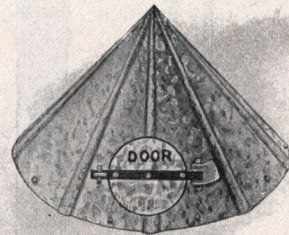


Fig. 3594. Style C

List Price, 60 cents per Square Foot

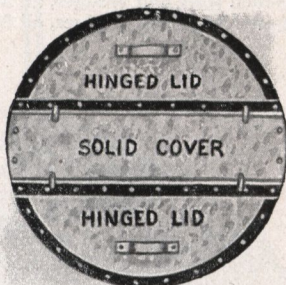


Fig. 3595. Style A

List Price, 50 cents per Square Foot

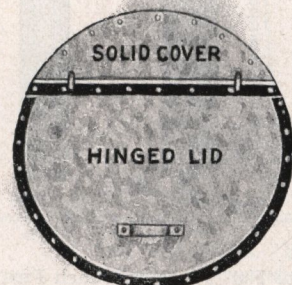


Fig. 3596. Style B

List Price, 50 cents per Square Foot

Plain Flat Covers, with Manhole, List Price, 30 cents

Well Augers. Sand Pumps, etc.



Fig. 3600. Worm Auger



Fig. 3601. Pod Auger

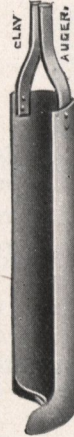


Fig. 3602. Clay Auger

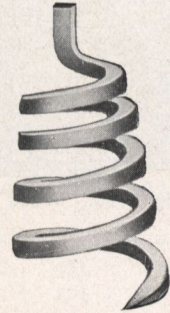


Fig. 3603. Boulder Auger

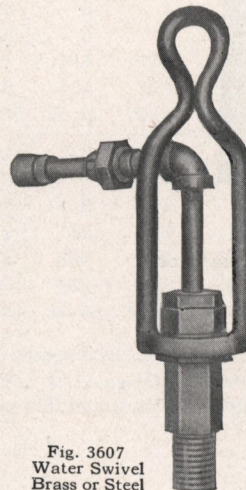
Size, inches.....	2	2½	3
Worm, Pod and Clay Augers, each.....	8.70	9.20	10.00
Boulder Auger			
Size, inches.....	6	8	
Each.....	9.00	12.00	

Sand Pumps, Fig. 3605

Size, inches.....	2	2½	3	3½	4	4
Length, feet.....	3	3	3	3	3	3
Each.....	6.00	7.20	7.50	7.80	8.10	9.00

Figs. 3604 and 3606

Size, inches.....	2½	3	4	5
Length, feet.....	4	3	3	3
Each.....	15.20	22.00	32.00	40.00

Fig. 3604
Plunger Swivel
Sand PumpFig. 3605
Common Sand
PumpFig. 3606
Plunger Sand
PumpFig. 3607
Water Swivel
Brass or Steel

Water Swivels

Can be Furnished Either in
Brass or Steel

Brass, each.....	22.00
Steel, each.....	18.00

Pulling Rings and
Wedges

5-inch Ring and Wedges, all Steel....	80.00
6-inch Ring and Wedges, all Steel....	70.00

Pulling Rings to Pull 2-inch to 4-inch Pipe..... 20.00

Wedges for 2 to 4-inch Pulling Rings

Size.....	2	2½	3	4
Cast Iron, each.....	6.50	5.80	5.00	5.00
Cast Steel, each.....	13.00	13.00	12.00	12.00

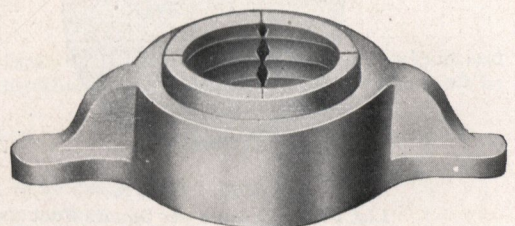


Fig. 3608. Pulling Rings and Wedges

Spray Fittings

The effectiveness of spraying is largely dependent upon the nozzle used. In spraying for fungous diseases our "Mistry" and "Mistry Jr." Nozzles, which give a fine mist, should be used. For codling moth nozzles giving a coarse spray, such as our Vermorel, are recommended.



Fig. 3610
Vermorel Single Spray

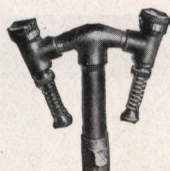


Fig. 3611
Vermorel Double Spray

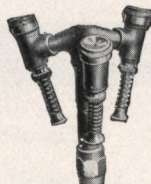


Fig. 3612
Vermorel Triple Spray

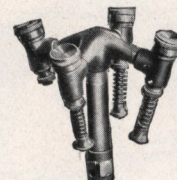


Fig. 3613
Vermorel 4-Spray

The Vermorel Nozzles are made of brass and fitted with a steel disc in the discharge cap. They are made up with screw joints and are easily cleaned by means of the degorger.

Vermorel Spray Nozzles

Fig. 3610. Single Threaded $\frac{1}{4}$ -inch	Each, 1.15.	With Hose Connection, each,	1.40
Fig. 3611. Double Threaded $\frac{1}{4}$ -inch	Each, 2.25.	With Hose Connection, each,	2.50
Fig. 3612. Triple Threaded $\frac{1}{4}$ -inch	Each, 3.10.	With Hose Connection, each,	3.40
Fig. 3613. 4-Spray Threaded $\frac{1}{4}$ -inch	Each, 4.00.	With Hose Connection, each,	4.25



Fig. 3614. Mistry

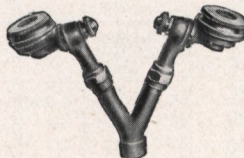


Fig. 3615. Mistry



Fig. 3616. Mistry Jr.



Fig. 3617. Mistry Jr. Angle

Fig. 3614 is made entirely of brass with removable steel disc in the discharge cap. It has swivel adjustment in order that spray may be directed at any desired angle. Two discs furnished—one for coarse and one for fine spray.

Price for $\frac{1}{4}$ -inch Pipe, each	1.60
For Hose, each	1.80

Fig. 3615. Two Mistry Nozzles on brass Y. The nozzles can be adjusted to spray in any direction. Two discs furnished, one for coarse and one for fine spray.

Price with Brass Y	3.20
--------------------	------

Fig. 3616. Mistry Jr. Made of brass with hardened steel disc placed in discharge cap, which can be removed and new one inserted. Produces a perfect mist under all conditions and covers a wide area. Two steel discs are furnished with each nozzle, one for coarse and one for fine spray. Not made with a degorger, as it never clogs. Convenient to handle, as there are no extensions to catch in the trees. Will do the work of two ordinary nozzles.

Price for $\frac{1}{4}$ -inch Pipe, each	1.10
Extra Discs, per dozen	.40

Figs. 3616 and 3617 can be furnished in aluminum instead of brass with a weight of but one ounce.

Price, either, each	1.10
Extra Discs, per dozen	.40

Lawn Sprinklers

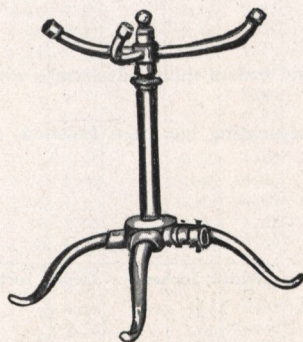


Fig. 3618. Columbia

Height 12 inches. One of the most popular sprinklers of this style. Will last for years.

Brass Head and Arms, per dozen	22.00
N. P. Head and Arms, per dozen	23.50

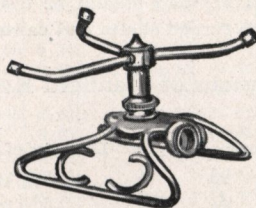


Fig. 3619. Zenith

Stands 5 inches high, with brass arms 3 inches long. A serviceable, reliable and satisfactory sprinkler at a low price.

Brass Head and Arms, per dozen	14.00
N. P. Head and Arms, per dozen	15.00

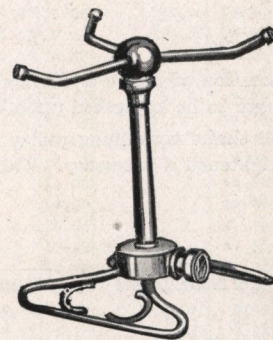


Fig. 3619A. Pluvius

Height 11 inches, with liberal length arms and large base. Ball bearing, revolving with slightest pressure.

Brass Arms, per dozen	20.00
N. P. Arms, per dozen	21.00

Note: These are only a few of the many styles of Lawn Sprinklers we are prepared to furnish.

Standard Price List

Finished Steel Shafting



Fig. 3620

Adopted, March 15, 1915

Diameter	Weight Per Foot	Price Per Pound	Diameter	Weight Per Foot	Price Per Pound	Diameter	Weight Per Foot	Price Per Pound
$\frac{3}{16}$	.095	.07 $\frac{1}{2}$	$1\frac{3}{4}$	8.18	.05 $\frac{1}{4}$	$3\frac{5}{16}$	29.32	.05 $\frac{1}{2}$
$\frac{1}{4}$	.167	.06 $\frac{1}{2}$	$1\frac{13}{16}$	8.78	.05 $\frac{1}{4}$	$3\frac{3}{8}$	30.43	.05 $\frac{1}{2}$
$\frac{5}{16}$	.260	.06 $\frac{1}{2}$	$1\frac{7}{8}$	9.39	.05 $\frac{1}{4}$	$3\frac{7}{16}$	31.58	.05 $\frac{1}{2}$
$\frac{3}{8}$	.375	.06 $\frac{1}{2}$	$1\frac{15}{16}$	10.03	.05 $\frac{1}{4}$	$3\frac{1}{2}$	32.73	.05 $\frac{3}{4}$
$\frac{7}{16}$	.511	.06	2	10.69	.05	$3\frac{9}{16}$	34.00	.05 $\frac{3}{4}$
$\frac{1}{2}$	.667	.06	$2\frac{1}{16}$	11.35	.05	$3\frac{5}{8}$	35.20	.05 $\frac{3}{4}$
$\frac{9}{16}$	.845	.06	$2\frac{1}{8}$	12.07	.05	$3\frac{11}{16}$	36.40	.05 $\frac{3}{4}$
$\frac{5}{8}$	1.05	.05 $\frac{3}{4}$	$2\frac{3}{8}$	12.80	.05	$3\frac{3}{4}$	37.57	.05 $\frac{3}{4}$
$\frac{11}{16}$	1.26	.05 $\frac{3}{4}$	$2\frac{1}{4}$	13.52	.05	$3\frac{7}{8}$	39.85	.05 $\frac{3}{4}$
$\frac{3}{4}$	1.50	.05 $\frac{1}{2}$	$2\frac{5}{16}$	14.35	.05	$3\frac{15}{16}$	41.40	.05 $\frac{3}{4}$
$\frac{13}{16}$	1.77	.05 $\frac{1}{2}$	$2\frac{3}{8}$	15.07	.05	4	42.75	.06
$\frac{7}{8}$	2.05	.05 $\frac{1}{2}$	$2\frac{7}{16}$	15.89	.05	$4\frac{1}{4}$	48.26	.06
$\frac{15}{16}$	2.35	.05 $\frac{1}{2}$	$2\frac{1}{2}$	16.70	.05	$4\frac{7}{16}$	52.62	.06
1	2.68	.05 $\frac{1}{2}$	$2\frac{9}{16}$	17.55	.05	$4\frac{1}{2}$	54.11	.06 $\frac{1}{2}$
$1\frac{1}{16}$	3.02	.05 $\frac{1}{2}$	$2\frac{5}{8}$	18.41	.05	$4\frac{3}{4}$	60.88	.06 $\frac{1}{2}$
$1\frac{1}{8}$	3.38	.05 $\frac{1}{2}$	$2\frac{11}{16}$	19.31	.05	$4\frac{11}{16}$	65.50	.06 $\frac{1}{2}$
$1\frac{3}{16}$	3.77	.05 $\frac{1}{2}$	$2\frac{3}{4}$	20.21	.05	5	67.45	.07
$1\frac{1}{4}$	4.17	.05 $\frac{1}{2}$	$2\frac{13}{16}$	21.15	.05	$5\frac{3}{16}$	71.86	.07
$1\frac{5}{16}$	4.61	.05 $\frac{1}{2}$	$2\frac{7}{8}$	22.09	.05	$5\frac{1}{4}$	73.60	.07
$1\frac{3}{8}$	5.05	.05 $\frac{1}{2}$	$2\frac{15}{16}$	23.06	.05	$5\frac{7}{16}$	78.95	.07 $\frac{3}{4}$
$1\frac{7}{16}$	5.52	.05 $\frac{1}{2}$	3	24.05	.05	$5\frac{1}{2}$	80.77	.07 $\frac{3}{4}$
$1\frac{1}{2}$	6.01	.05 $\frac{1}{2}$	$3\frac{1}{16}$	25.07	.05 $\frac{1}{2}$	$5\frac{11}{16}$	86.38	.07 $\frac{3}{4}$
$1\frac{9}{16}$	6.52	.05 $\frac{1}{4}$	$3\frac{1}{8}$	26.09	.05 $\frac{1}{2}$	$5\frac{3}{4}$	88.29	.07 $\frac{3}{4}$
$1\frac{5}{8}$	7.06	.05 $\frac{1}{4}$	$3\frac{1}{4}$	27.16	.05 $\frac{1}{2}$	$5\frac{15}{16}$	94.14	.07 $\frac{3}{4}$
$1\frac{11}{16}$	7.61	.05 $\frac{1}{4}$	$3\frac{1}{2}$	28.22	.05 $\frac{1}{2}$	6	96.14	.08 $\frac{1}{2}$

Carried in stock in even lengths—10 feet to 24 feet inclusive.

Extra price charged for cutting to special length. Boxing extra at cost.

Keyseating of Shafting

Location of pulley and other special keyseats should be plainly shown by sketch, and orders should designate which shafts are to be keyseated upon both ends for couplings and which upon one end only.

All shafts containing pulley or other special keyseats should be tested after the keyseating has been finished, and re-straightened if necessary. This applies alike to turned shafts and calendered shafts.

Dimensions of Standard Keyseats

Diameter of Shaft, Inches	Keyseat		Diameter of Shaft, Inches	Keyseat	
	Width, Inch	Depth, Inch		Width, Inches	Depth, Inch
$\frac{15}{16}$ to $1\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{8}$	$5\frac{1}{4}$ to $6\frac{7}{16}$	$1\frac{1}{8}$	$\frac{9}{16}$
$1\frac{3}{16}$ to $1\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{32}$	$6\frac{1}{2}$ to $7\frac{11}{16}$	$1\frac{1}{4}$	$\frac{5}{8}$
$1\frac{3}{8}$ to $1\frac{13}{16}$	$\frac{3}{8}$	$\frac{3}{16}$	$7\frac{3}{4}$ to $8\frac{15}{16}$	$1\frac{3}{8}$	$\frac{11}{16}$
$1\frac{7}{8}$ to $2\frac{5}{16}$	$\frac{1}{2}$	$\frac{1}{4}$	9 to $10\frac{9}{16}$	$1\frac{1}{2}$	$\frac{3}{4}$
$2\frac{3}{8}$ to $2\frac{13}{16}$	$\frac{5}{8}$	$\frac{5}{16}$	$10\frac{1}{4}$ to $11\frac{7}{16}$	$1\frac{5}{8}$	$\frac{13}{16}$
$2\frac{7}{8}$ to $3\frac{5}{16}$	$\frac{3}{4}$	$\frac{3}{8}$	$11\frac{1}{2}$ to $12\frac{11}{16}$	$1\frac{3}{4}$	$\frac{7}{8}$
$3\frac{3}{8}$ to $3\frac{13}{16}$	$\frac{7}{8}$	$\frac{7}{16}$	$12\frac{3}{4}$ to $13\frac{15}{16}$	$1\frac{7}{8}$	$\frac{15}{16}$
$3\frac{7}{8}$ to $5\frac{3}{16}$	1	$\frac{1}{2}$	14 to $14\frac{15}{16}$	2	1

Cast Iron Pulleys

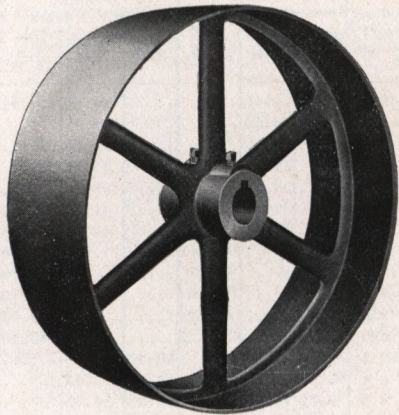
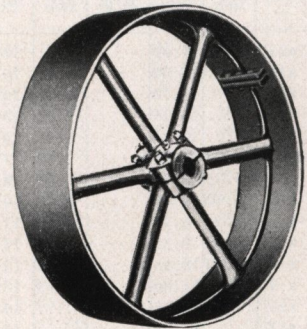


Fig. 3630

Machine-moulded, Turned,
Balanced, Bored,
Set-screwed or Keyseated

Finished Cast Iron
Split PulleysFig. 3631
Split Pulley

Cast Iron Pulleys

Diam. and Face	SOLID			SPLIT			Diam. and Face	SOLID			SPLIT			Diam. and Face	SOLID			SPLIT		
	Single Belt	Dbl. Belt	Dbl. Arm D. B.	Single Belt	Dbl. Belt	Dbl. Arm D. B.		Single Belt	Dbl. Belt	Dbl. Arm D. B.	Single Belt	Dbl. Belt	Dbl. Arm D. B.		Single Belt	Dbl. Belt	Dbl. Arm D. B.	Single Belt	Dbl. Belt	Dbl. Arm D. B.
6x 3	2.20	2.50	.....	3.70	4.00	.....	10x 9	.....	6.80	.....	.....	9.60	.....	14x 8	7.20	8.30	.....	10.05	11.15	.....
x 4	2.50	2.80	.....	4.00	4.30	.....	x10	.....	7.50	.....	.....	10.30	.....	x 9	7.95	9.10	.....	11.30	12.45	.....
x 5	2.85	3.15	.....	4.60	4.90	.....	x11	.....	8.20	.....	.....	11.40	.....	x10	.....	9.95	.....	.....	13.30	.....
x 6	3.20	3.60	.....	4.95	5.35	.....	x12	.....	8.95	.....	.....	12.15	.....	x11	.....	10.80	.....	.....	14.65	.....
x 7	3.60	4.10	.....	5.60	6.10	.....	11x 3	3.30	3.70	.....	5.00	5.40	.....	x12	.....	11.70	.....	.....	15.55	.....
x 8	4.05	4.55	.....	6.05	6.55	.....	x 4	3.75	4.25	.....	5.45	5.95	.....	x13	.....	12.60	.....	.....	17.00	.....
x 9	.....	5.05	.....	.....	7.35	.....	x 5	4.20	4.80	.....	6.25	6.85	.....	x14	.....	13.50	.....	.....	17.90	.....
x10	.....	5.55	.....	.....	7.85	.....	x 6	4.70	5.40	.....	6.75	7.65	.....	x15	.....	14.45	.....	.....	19.40	.....
x11	.....	6.05	.....	.....	8.65	.....	x 7	5.25	6.00	.....	7.65	8.40	.....	15x 3	4.35	4.80	.....	6.30	6.75	.....
x12	.....	6.55	.....	.....	9.15	.....	x 8	5.85	6.65	.....	8.25	9.05	.....	x 4	4.85	5.55	.....	6.80	7.50	.....
7x 3	2.40	2.70	.....	3.90	4.20	.....	x 9	.....	7.30	.....	.....	10.10	.....	x 5	5.65	6.35	.....	8.05	8.75	.....
x 4	2.75	3.05	.....	4.25	4.55	.....	x10	.....	8.00	.....	.....	10.80	.....	x 6	6.10	7.15	.....	8.50	9.55	.....
x 5	3.10	3.50	.....	4.85	5.25	.....	x11	.....	8.75	.....	.....	11.95	.....	x 7	6.85	8.00	.....	9.70	10.85	.....
x 6	3.50	3.95	.....	5.25	5.70	.....	x12	.....	9.55	.....	.....	12.75	.....	x 8	7.10	8.85	.....	9.95	11.70	.....
x 7	3.95	4.40	.....	5.95	6.40	.....	x13	.....	10.40	.....	.....	14.05	.....	x 9	8.60	9.75	.....	11.95	13.10	.....
x 8	4.40	4.90	.....	6.40	6.90	.....	12x 3	3.60	3.95	.....	5.40	5.75	.....	x10	.....	10.65	.....	.....	14.00	.....
x 9	.....	5.35	.....	.....	7.65	.....	x 4	4.05	4.55	.....	5.85	6.40	.....	x11	.....	11.60	.....	.....	15.45	.....
x10	.....	5.85	.....	.....	8.15	.....	x 5	4.55	5.15	.....	6.75	7.35	.....	x12	.....	12.55	.....	.....	16.40	.....
x11	.....	6.35	.....	.....	8.95	.....	x 6	5.10	5.80	.....	7.30	8.00	.....	x13	.....	13.50	.....	.....	17.90	.....
x12	.....	6.85	.....	.....	9.50	.....	x 7	5.70	6.45	.....	8.30	9.05	.....	x14	.....	14.50	.....	.....	18.90	.....
8x 3	2.65	2.90	.....	4.25	4.50	.....	x 8	6.30	7.15	.....	8.90	9.75	.....	x15	.....	15.50	.....	.....	20.45	.....
x 4	3.00	3.35	.....	4.60	4.95	.....	x 9	.....	7.85	.....	.....	10.90	.....	16x 3	4.65	5.10	.....	6.75	7.20	.....
x 5	3.40	3.80	.....	5.30	5.70	.....	x10	.....	8.60	.....	.....	11.65	.....	x 4	5.20	5.80	.....	7.30	7.90	.....
x 6	3.80	4.25	.....	5.70	6.15	.....	x11	.....	9.35	.....	.....	12.85	.....	x 5	5.80	6.60	.....	8.40	9.20	.....
x 7	4.25	4.75	.....	6.45	6.95	.....	x12	.....	10.15	.....	.....	13.65	.....	x 6	6.50	7.45	.....	9.10	10.05	.....
x 8	4.75	5.25	.....	6.95	7.45	.....	x13	.....	10.95	.....	.....	14.95	.....	x 7	7.30	8.50	.....	10.40	11.60	.....
x 9	.....	5.80	.....	.....	8.35	.....	x14	.....	11.75	.....	.....	15.75	.....	x 8	8.20	9.20	.....	11.30	12.30	.....
x10	.....	6.35	.....	.....	8.90	.....	x15	.....	12.60	.....	.....	17.10	.....	x 9	9.20	10.10	.....	12.85	13.75	.....
x11	.....	6.95	.....	.....	9.85	.....	13x 3	3.85	4.20	.....	5.45	6.00	.....	x10	.....	11.05	.....	.....	14.70	.....
x12	.....	7.60	.....	.....	10.50	.....	x 4	4.35	4.85	.....	6.15	6.65	.....	x11	.....	12.00	.....	.....	16.20	.....
9x 3	2.90	3.20	.....	4.50	4.80	.....	x 5	4.90	5.50	.....	7.10	7.70	.....	x12	.....	13.00	.....	.....	17.20	.....
x 4	3.25	3.65	.....	4.85	5.25	.....	x 6	5.50	6.20	.....	7.70	8.40	.....	x13	.....	14.00	.....	.....	18.80	.....
x 5	3.65	4.15	.....	5.55	6.05	.....	x 7	6.10	6.90	.....	8.70	9.50	.....	x14	.....	15.00	.....	.....	19.80	.....
x 6	4.10	4.65	.....	6.00	6.55	.....	x 8	6.75	7.65	.....	9.35	10.25	.....	x15	.....	16.05	.....	.....	21.45	.....
x 7	4.60	5.20	.....	6.80	7.40	.....	x 9	7.45	8.40	.....	10.50	11.45	.....	x16	.....	17.20	.....	.....	22.65	.....
x 8	5.10	5.75	.....	7.30	7.95	.....	x10	.....	9.20	.....	.....	12.25	.....	x17	.....	18.20	.....	.....	24.25	.....
x 9	.....	6.30	.....	.....	8.85	.....	x11	.....	10.00	.....	.....	13.50	.....	17x 3	4.90	5.40	.....	7.00	7.50	.....
x10	.....	6.90	.....	.....	9.45	.....	x12	.....	10.85	.....	.....	14.35	.....	x 4	5.50	6.25	.....	7.60	8.35	.....
x11	.....	7.50	.....	.....	10.40	.....	x13	.....	11.70	.....	.....	15.70	.....	x 5	6.25	7.10	.....	8.85	9.70	.....
x12	.....	8.15	.....	.....	11.05	.....	x14	.....	12.60	.....	.....	16.60	.....	x 6	7.00	8.00	.....	9.60	10.60	.....
10x 3	3.10	3.45	.....	4.80	5.15	.....	x15	.....	13.50	.....	.....	18.00	.....	x 7	7.85	8.90	.....	10.95	12.00	.....
x 4	3.50	3.95	.....	5.20	5.65	.....	14x 3	4.05	4.50	.....	6.00	6.45	.....	x 8	8.75	9.85	.....	11.95	12.95	.....
x 5	3.95	4.45	.....	6.00	6.50	.....	x 4	4.65	5.20	.....	6.60	7.15	.....	x 9	9.75	10.80	.....	13.40	14.45	.....
x 6	4.40	5.00	.....	6.45	7.05	.....	x 5	5.10	5.95	.....	7.50	8.35	.....	x10	.....	11.80	.....	.....	15.50	.....
x 7	4.90	5.55	.....	7.30	7.95	.....	x 6	5.75	6.70	.....	8.15	9.10	.....	x11	.....	12.80	.....	.....	17.00	.....
x 8	5.45	6.15	.....	7.85	8.55	.....	x 7	6.45	7.50	.....	9.30	10.35	.....	x12	.....	13.85	.....	.....	18.05	.....

Maximum and minimum Bores and Prices for Special Bores, page 368.

Cast Iron Pulleys—Continued

Diam. and Face	SOLID			SPLIT			Diam. and Face	SOLID			SPLIT			Diam. and Face	SOLID			SPLIT		
	Single Belt	Dbl. Belt	Dbl. Arm D. B.	Single Belt	Dbl. Belt	Dbl. Arm D. B.		Single Belt	Dbl. Belt	Dbl. Arm D. B.	Single Belt	Dbl. Belt	Dbl. Arm D. B.		Single Belt	Dbl. Belt	Dbl. Arm D. B.	Single Belt	Dbl. Belt	Dbl. Arm D. B.
17x13		14.90			18.70		21x13		19.00			24.65		24x14		24.00			30.55	
x14		16.00			20.80		x14		20.35			26.00		x15		25.60			32.95	
x15		17.10			22.50		x15		21.75			28.10		x16		27.25			34.60	
x16		18.25			23.65		x16		23.15			29.50		x17		28.90			37.10	
x17		19.40			25.45		x17		24.60			31.70		x18		30.60			38.80	
18x 3	5.20	5.70		7.45	7.95		x18		26.05			33.15		x19		32.30			41.35	
x 4	5.85	6.65		8.05	8.90		x19		27.55			35.40		x20		34.05			43.10	48.25
x 5	6.60	7.60		9.40	10.40		x20			33.10			40.95	x22			42.45		52.40	
x 6	7.40	8.55		10.20	11.35		x22			35.95			44.60	x24			45.85		56.70	
x 7	8.30	9.55		11.70	12.90		x24			38.85			48.30	x26			49.30		61.10	
x 8	9.30	10.55		12.65	13.90		x26			41.90			52.20	x28			52.80		65.55	
x 9	10.40	11.60		14.35	15.55		x28			44.90			56.05	x30			56.35		70.10	
x10		12.65			16.60		22x 3	6.35	7.10		9.00	9.75		25x 3	7.40	8.35		10.20	11.15	
x11		13.75			18.30		x 4	7.40	8.30		10.05	10.95		x 4	8.60	9.75		11.40	12.55	
x12		14.85			19.40		x 5	8.45	9.50		11.75	12.80		x 5	9.80	11.20		13.35	14.75	
x13		15.90			21.10		x 6	9.50	10.75		12.80	14.05		x 6	11.00	12.65		14.55	16.20	
x14		17.05			22.25		x 7	10.55	12.00		14.50	15.95		x 7	12.20	14.15		16.45	18.40	
x15		18.25			24.10		x 8	11.55	13.30		15.50	17.25		x 8	13.40	15.65		17.65	19.90	
x16		19.45			25.30		x 9	12.65	14.60		17.30	19.25		x 9	14.65	17.20		19.65	22.20	
x17		20.70			27.25		x10	13.85	15.95		18.50	20.60		x10	15.90	18.75		20.90	23.75	
19x 3	5.45	6.05		7.70	8.30		x11		17.30			22.65		x11		20.35			26.10	
x 4	6.25	7.05		8.50	9.30		x12		18.70			24.05		x12		21.95			27.70	
x 5	7.05	8.10		9.85	10.95		x13		20.10			26.20		x13		23.60			30.15	
x 6	7.90	9.15		10.70	11.95		x14		21.55			27.65		x14		25.25			31.80	
x 7	8.85	10.25		12.20	13.60		x15		23.00			29.85		x15		26.95			34.30	
x 8	9.85	11.35		13.20	14.70		x16		24.50			31.35		x16		28.65			36.00	
x 9	10.95	12.40		14.90	16.35		x17		26.00			33.65		x17		30.40			38.60	
x10		13.55			17.50		x18		27.55			35.20		x18		32.15			40.35	
x11		14.70			19.25		x19		29.10			37.55		x19		33.95			43.00	
x12		15.90			20.45		x20		30.70	35.10		39.15	43.40	x20		35.75	41.25		44.80	50.30
x13		17.10			22.30		x22			38.05			47.35	x22		39.45	44.75		49.40	54.70
x14		18.35			23.55		x24			41.15			51.30	x24			48.30			59.15
x15		19.60			25.45		x26			44.25			55.30	x26			51.90			63.70
x16		20.90			26.75		x28			47.40			59.35	x28			55.55			68.30
x17		22.20			28.75		x30			50.60			63.50	x30			59.25			73.00
x18		23.55			30.10		23x 3	6.70	7.50		9.35	10.15		26x 3	7.75	8.80		10.75	11.80	
x19		24.90			32.15		x 4	7.80	8.75		10.45	11.40		x 4	9.00	10.30		12.00	13.30	
20x 3	5.75	6.40		8.20	8.85		x 5	8.90	10.05		12.20	13.33		x 5	10.25	11.80		14.10	15.65	
x 4	6.65	7.45		9.10	9.90		x 6	10.00	11.35		13.30	14.65		x 6	11.50	13.35		15.35	17.20	
x 5	7.55	8.55		10.60	11.60		x 7	11.10	12.70		15.05	16.65		x 7	12.75	14.90		17.35	19.50	
x 6	8.50	9.65		11.55	12.70		x 8	12.15	14.05		16.10	18.00		x 8	14.05	16.50		18.65	21.10	
x 7	9.45	10.80		13.10	14.45		x 9	13.30	15.45		17.95	20.10		x 9	15.35	18.10		20.75	23.50	
x 8	10.45	11.95		14.10	15.60		x10	14.45	16.85		19.10	21.50		x10	16.70	19.75		22.10	25.15	
x 9	11.55	13.15		15.85	17.45		x11		18.30			23.65		x11		21.40			27.60	
x10	12.70	14.35		17.00	18.65		x12		19.75			25.10		x12		23.10			29.30	
x11		15.60			20.55		x13		21.25			27.35		x13		24.80			31.85	
x12		16.85			21.80		x14		22.75			28.85		x14		26.55			33.60	
x13		18.15			23.80		x15		24.30			31.15		x15		28.30			36.20	
x14		19.45			25.10		x16		25.85			32.70		x16		30.10			38.00	
x15		20.80			27.15		x17		27.45			35.10		x17		31.90			40.70	
x16		22.15			28.50		x18		29.05			36.70		x18		33.75			42.55	
x17		23.55			30.65		x19		30.70			39.15		x19		35.60			45.30	
x18		24.95			32.05		x20		32.35	37.10		40.80	45.55	x20		37.50	43.45		47.20	53.15
x19		26.40			34.25		x22			40.25			49.55	x22		41.35	47.10		52.00	57.75
x20			31.60			39.45	x24			43.45			53.60	x24			50.80			62.40
x22			34.35			43.00	x26			46.70			57.75	x26			54.55			67.15
x24			37.15			46.60	x28			50.00			61.95	x28			58.35			71.95
x26			40.00			50.30	x30			53.35			66.25	x30			62.20			76.85
x28			42.90			54.05	24x 3	7.05	7.90		9.85	10.70		27x 3	8.15	9.30		11.15	12.30	
21x 3	6.05	6.75		8.50	9.20		x 4	8.20	9.25		11.00	12.05		x 4	9.50	10.85		12.50	13.85	
x 4	7.00	7.85		9.45	10.30		x 5	9.35	10.60		12.90	14.15		x 5	10.80	12.45		14.65	16.30	
x 5	8.00	9.00		11.05	12.05		x 6	10.50	12.00		14.05	15.55		x 6	12.10	14.05		15.95	17.90	
x 6	9.00	10.15		12.05	13.20		x 7	11.65	13.40		15.90	17.65		x 7	13.45	15.70		18.05	20.30	
x 7	10.00	11.35		13.65	15.00		x 8	12.80	14.85		17.05	19.10		x 8	14.80	17.35		19.40	21.95	
x 8	11.00	12.55		14.65	16.20		x 9	14.00	16.30		19.00	21.30		x 9	16.20	19.05		21.60	24.45	
x 9	12.10	13.80		16.40	18.10		x10	15.20	17.80		20.20	22.80		x10	17.65	20.75		23.05	26.15	
x10	13.25	15.05		17.55	19.35		x11		19.30			25.05		x11	19.15	22.50		25.35	28.70	
x11		16.35			21.30		x12		20.85			26.60		x12		24.25			30.45	
x12		17.65			22.60		x13		22.40			28.95		x13		26.05			33.10	

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Cast Iron Pulleys—Continued

Diam. and Face	SOLID			SPLIT			Diam. and Face	SOLID			SPLIT			Diam. and Face	SOLID			SPLIT		
	Single Belt	Dbl. Belt	Dbl. Arm D. B.	Single Belt	Dbl. Belt	Dbl. Arm D. B.		Single Belt	Dbl. Belt	Dbl. Arm D. B.	Single Belt	Dbl. Belt	Dbl. Arm D. B.		Single Belt	Dbl. Belt	Dbl. Arm D. B.	Single Belt	Dbl. Belt	Dbl. Arm D. B.
27x14	27.85			34.90			30x12	27.85			34.95			33x 6	15.85	18.60		20.65	23.40	
x15	29.70			37.60			x13	29.85			37.90			x 7	17.65	20.70		23.25	26.30	
x16	31.55			39.45			x14	31.90			39.95			x 8	19.45	22.80		26.10	29.45	
x17	33.45			42.25			x15	33.95			42.95			x 9	21.30	24.95		27.95	31.60	
x18	35.35			44.15			x16	36.00			45.00			x10	23.15	27.10		29.80	33.75	
x19	37.30			47.00			x17	38.10			48.10			x11	25.05	29.30		32.65	36.90	
x20	39.25	45.65		48.95	55.35		x18	40.25			50.25			x12	31.55			39.20		
x22	43.25	49.50		53.90	60.15		x19	42.40			53.40			x13	33.80			42.40		
x24		53.35			64.95		x20	44.60	52.60		55.60	63.60		x14	36.10			44.70		
x26		57.30			69.90		x22	49.05	56.85		61.10	68.90		x15	38.40			48.00		
x28		61.20			74.80		x24		61.25			74.35		x16	40.75			50.35		
x30		65.20			79.85		x26		65.65			79.85		x17	43.10			53.75		
28x 3	8.55	9.80		11.80	13.05		x28		70.15			85.45		x18	45.50			56.15		
x 4	9.95	11.45		13.20	14.65		x30		74.70			91.15		x19	47.90			59.60		
x 5	11.35	13.10		15.50	17.25		x32		79.25			96.85		x20	50.35	59.60		62.05	71.30	
x 6	12.75	14.80		16.90	18.95		x34		83.90			102.70		x22	55.30	64.45		68.10	77.25	
x 7	14.15	16.50		19.10	21.45		31x 3	9.85	11.40		13.35	14.90		x24	60.35	69.40		74.25	83.30	
x 8	15.55	18.25		20.50	23.20		x 4	11.40	13.25		14.90	16.75		x26		74.35			89.40	
x 9	17.00	20.00		22.80	25.80		x 5	12.95	15.15		17.40	19.60		x28		79.40			95.60	
x10	18.50	21.80		24.30	27.60		x 6	14.55	17.05		19.00	21.50		x30		84.45			101.85	
x11	20.10	23.60		26.75	30.25		x 7	16.15	19.00		21.45	24.30		x32		89.55			108.15	
x12	25.45			32.10			x 8	17.80	20.95		23.10	26.25		x34		94.70			114.55	
x13	27.80			35.35			x 9	19.50	22.95		25.70	29.15		34x 3	11.35	13.10		15.45	17.20	
x14	29.20			36.75			x10	21.25	24.95		27.45	31.15		x 4	12.95	15.20		17.05	19.30	
x15	31.10			39.55			x11	23.00	27.00		30.10	34.10		x 5	14.70	17.30		19.85	22.45	
x16	33.05			41.50			x12	29.05			36.15			x 6	16.50	19.45		21.65	24.60	
x17	34.90			44.30			x13	31.15			39.20			x 7	18.40	21.60		24.50	27.70	
x18	36.90			46.30			x14	33.25			41.30			x 8	20.30	23.80		26.40	29.90	
x19	38.90			49.25			x15	35.40			44.40			x 9	22.20	26.05		29.30	33.15	
x20	40.95	47.95		51.30	49.25		x16	37.55			46.55			x10	24.15	28.30		31.25	35.40	
x22	45.10	51.90		56.45	63.25		x17	39.75			49.75			x11	26.10	30.60		34.20	38.70	
x24		56.00			68.35		x18	41.95			51.95			x12		32.90			41.00	
x26		60.05			73.45		x19	44.20			55.20			x13		35.25			44.40	
x28		64.25			78.70		x20	46.25	54.90		57.45	65.90		x14		37.60			46.75	
x30		68.45			84.00		x22	51.10	59.40		63.15	71.45		x15		40.00			50.20	
x32		72.70			89.35		x24		63.90			77.00		x16		42.40			52.60	
29x 3	9.00	10.30		12.25	13.55		x26		68.55			82.75		x17		44.85			56.15	
x 4	10.50	12.00		13.75	15.25		x28		73.15			88.45		x18		47.30			59.60	
x 5	12.00	13.75		16.15	17.90		x30		77.85			94.30		x19		49.80			62.20	
x 6	13.45	15.50		17.60	19.65		x32		82.60			100.20		x20		52.30	62.25		64.70	74.65
x 7	14.90	17.30		19.85	22.25		x34		86.40			106.20		x22		57.40	67.30		70.95	80.85
x 8	16.35	19.10		21.30	24.05		32x 3	10.30	11.95		14.10	15.75		x24		62.65	72.40		77.35	87.10
x 9	17.95	20.95		24.75	26.75		x 4	11.90	13.90		15.70	17.70		x26			77.55			93.45
x10	19.45	22.80		25.25	28.60		x 5	13.55	15.85		18.35	20.65		x28			82.70			99.80
x11	21.05	24.70		27.70	31.35		x 6	15.20	17.85		20.00	22.65		x30			87.90			106.25
x12	26.60			33.25			x 7	16.90	19.85		22.60	25.55		x32			93.15			112.57
x13	28.55			36.10			x 8	18.60	21.90		24.30	27.60		x34			98.45			119.35
x14	30.50			38.05			x 9	20.35	23.95		27.00	30.60		x36			103.85			126.05
x15	32.50			40.95			x10	22.15	26.05		28.80	32.70		35x 3	11.85	13.70		15.95	17.80	
x16	34.50			42.95			x11	24.00	28.15		31.60	35.75		x 4	13.50	15.90		17.60	20.00	
x17	36.55			45.95			x12		30.30			37.90		x 5	15.30	18.10		20.45	23.25	
x18	38.60			48.00			x13		32.50			41.10		x 6	17.15	20.35		22.30	25.50	
x19	40.70			51.05			x14		34.70			43.30		x 7	19.10	22.60		25.20	28.70	
x20	42.80	50.15		53.15	60.50		x15		36.95			46.55		x 8	21.20	24.90		27.30	31.00	
x22	47.10	54.35		58.45	65.70		x16		39.20			48.80		x 9	23.10	27.20		30.20	34.30	
x24		58.50			70.85		x17		41.50			52.15		x10	25.15	29.55		32.25	36.65	
x26		62.80			76.20		x18		43.80			54.45		x11	27.20	31.90		35.30	40.00	
x28		67.10			81.55		x19		46.15			57.85		x12		34.30			42.40	
x30		71.45			87.00		x20		48.50	57.30		60.20	69.00	x13		36.70			45.85	
x32		75.85			91.50		x22		53.30	62.05		66.10	74.85	x14		39.15			48.30	
30x 3	9.40	10.85		12.90	14.35		x24		66.65			80.55		x15		41.60			51.80	
x 4	10.90	12.65		14.40	16.15		x26		71.50			86.55		x16		44.10			54.30	
x 5	12.45	14.45		16.90	18.90		x28		76.35			92.45		x17		46.60			58.90	
x 6	14.00	16.30		18.45	20.75		x30		81.25			98.65		x18		49.15			60.55	
x 7	15.85	18.15		21.15	23.45		x32		86.20			104.80		x19		51.70			64.10	
x 8	17.15	20.05		22.45	25.35		x34		91.20			111.05		x20		54.30	65.00		66.70	77.40
x 9	18.75	21.95		24.95	28.15		33x 3	10.80	12.50		14.60	16.30		x22		59.60	70.20		73.15	83.75
x10	20.35	23.90		26.55	30.10		x 4	12.40	14.50		16.20	18.30		x24		65.00	75.45		79.70	90.15
x11	22.00	25.85		29.10	32.95		x 5	14.10	16.55		18.90	21.35		x26			80.75			96.65

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Cast Iron Pulleys—Continued

Diam. and Face	SOLID			SPLIT			Diam. and Face	SOLID			SPLIT			Diam. and Face	SOLID			SPLIT		
	Single Belt	Dbl. Belt	Dbl. Arm D. B.	Single Belt	Dbl. Belt	Dbl. Arm D. B.		Single Belt	Dbl. Belt	Dbl. Arm D. B.	Single Belt	Dbl. Belt	Dbl. Arm D. B.		Single Belt	Dbl. Belt	Dbl. Arm D. B.	Single Belt	Dbl. Belt	Dbl. Arm D. B.
35x28			86.15			103.25	38x17		52.30			64.95		41x 8	26.55	31.15		33.95	38.55	
x30			91.55			109.90	x18		55.10			67.75		x 9	28.90	33.90		37.45	42.45	
x32			97.00			116.60	x19		57.95			70.80		x10	31.25	36.65		39.80	45.20	
x34			102.50			123.40	x20		60.80	73.25		74.65	87.05	x11	33.60	39.45		43.30	49.15	
x36			108.10			130.30	x22		66.55	79.10		81.65	92.40	x12	36.00	42.25		45.70	51.95	
36x 3	12.40	14.30		16.80	18.70		x24		72.35	84.90		88.70	101.25	x13		45.05		55.95		
x 4	14.20	16.55		18.60	20.95		x26			90.85			108.50	x14		47.85		58.75		
x 5	16.05	18.85		21.55	24.40		x28			96.80			115.75	x15		50.70		62.80		
x 6	18.00	21.15		23.50	26.65		x30			102.80			123.10	x16		53.55		65.65		
x 7	20.05	23.50		26.55	30.00		x32			108.85			130.50	x17		56.40		69.75		
x 8	22.10	25.85		28.60	32.35		x34			114.95			138.00	x18		59.25		72.60		
x 9	24.15	28.25		31.70	35.80		x36			121.10			145.55	x19		62.15		78.75		
x10	26.20	30.70		33.75	38.25		x38			127.35			153.15	x20		65.05	80.65	79.65	95.25	
x11	28.30	33.15		36.90	41.75		39x 4	16.20	18.75		20.95	23.50		x22		70.90	86.80	86.80	102.70	
x12	30.45	35.65		39.05	44.25		x 5	18.35	21.30		24.25	27.20		x24		76.80	92.95	94.00	110.15	
x13		38.15			47.85		x 6	20.50	23.85		26.40	29.75		x26			99.10		117.65	
x14		40.70			50.40		x 7	22.70	26.40		29.65	33.35		x28			105.25		125.15	
x15		43.25			54.05		x 8	24.90	29.00		31.85	35.95		x30			111.40		132.70	
x16		45.85			56.65		x 9	27.10	31.60		35.15	39.65		x32			117.65		140.35	
x17		48.45			60.40		x10	29.35	34.25		37.40	42.30		x34			123.95		148.10	
x18		51.10			63.05		x11	31.60	36.80		40.75	45.95		x36			130.30		155.90	
x19		53.75			66.85		x12	33.90	39.60		43.05	48.75		x38			136.70		163.70	
x20		56.45	67.55		69.55	80.65	x13		42.30			52.60		42x 4	17.90	21.05		23.35	26.50	
x22		61.90	72.95		76.20	87.25	x14		45.05			55.35		x 5	20.20	23.85		26.90	30.55	
x24		67.40	78.45		82.90	93.95	x15		47.80			59.25		x 6	22.60	26.65		29.30	33.35	
x26			83.95		100.70		x16		50.60			62.05		x 7	25.00	29.45		32.85	37.30	
x28			89.55		107.55		x17		53.40			66.05		x 8	27.40	32.25		35.25	40.10	
x30			95.15		114.45		x18		56.25			68.90		x 9	29.80	35.10		38.85	44.15	
x32			100.80		121.40		x19		59.10			72.95		x10	32.20	37.95		41.25	47.00	
x34			106.50		128.45		x20		62.00	75.35		75.85	89.20	x11	34.65	40.80		44.90	51.00	
x36			112.30		135.60		x22		67.85	80.95		82.95	96.05	x12	37.10	43.70		47.35	53.95	
37x 4	14.90	17.25		19.30	21.65		x24		73.80	87.10		90.15	103.45	x13		46.60		57.80		
x 5	16.90	19.65		22.40	25.15		x26			93.05			110.70	x14		49.50		60.70		
x 6	18.95	22.05		24.45	27.55		x28			99.10			118.05	x15		52.45		65.20		
x 7	21.00	24.50		27.50	31.00		x30			105.20			125.50	x16		55.40		68.15		
x 8	23.10	26.95		29.60	33.45		x32			111.35			133.00	x17		58.35		72.40		
x 9	25.20	29.45		32.75	37.00		x34			117.55			140.60	x18		61.35		75.40		
x10	27.30	31.95		34.85	39.50		x36			123.80			148.25	x19		64.35		79.70		
x11	29.45	34.50		38.05	43.10		x38			130.10			155.90	x20		67.35	83.50	82.70	98.85	
x12	31.65	37.05		40.25	45.65		40x 4	16.75	19.50		21.85	24.60		x22		73.35	89.75	90.05	106.45	
x13		39.65			49.35		x 5	18.95	22.15		25.25	28.45		x24		79.40	96.15	97.45	114.20	
x14		42.25			51.95		x 6	21.15	24.80		27.45	31.10		x26			102.50		121.95	
x15		44.90			55.70		x 7	23.40	27.45		30.80	34.85		x28			108.90		129.75	
x16		47.55			58.35		x 8	25.70	30.10		33.10	37.50		x30			115.30		137.60	
x17		50.25			62.20		x 9	28.00	32.80		36.55	41.35		x32			121.75		145.50	
x18		52.95			64.85		x10	30.30	35.50		38.85	42.05		x34			128.25		153.50	
x19		55.70			68.80		x11	32.60	38.20		42.30	47.90		x36			134.80		161.55	
x20		58.45	70.30		71.55	83.40	x12	34.95	40.95		44.65	50.65		x38			141.45		169.65	
x22		64.10	75.90		78.40	90.20	x13		43.70			54.60		x40			148.15		178.00	
x24		69.85	81.50		85.35	97.00	x14		46.45			57.35		43x 4	18.60	21.85		24.05	27.30	
x26			87.25		104.00		x15		49.25			61.35		x 5	21.00	24.75		27.70	31.45	
x28			92.95		110.95		x16		52.05			64.15		x 6	23.40	27.65		30.10	34.35	
x30			98.70		118.00		x17		54.90			68.25		x 7	25.85	30.55		33.70	38.40	
x32			104.50		125.10		x18		57.75			71.10		x 8	28.30	33.45		36.15	41.30	
x34			110.35		132.30		x19		60.60			75.20		x 9	30.75	36.40		39.80	45.45	
x36			116.30		139.60		x20		63.50	78.10		78.10	92.70	x10	33.20	39.35		42.25	48.40	
38x 4	15.65	18.00		20.40	22.75		x22		69.35	84.05		85.25	99.95	x11	35.70	42.30		45.95	52.55	
x 5	17.70	20.50		23.65	26.45		x24		75.35	90.10		92.55	107.30	x12	38.20	45.25		48.45	55.50	
x 6	19.80	23.00		25.70	28.90		x26			96.15			114.70	x13		48.25		59.45		
x 7	21.95	25.55		28.90	32.50		x28			102.20			122.10	x14		51.25		62.45		
x 8	24.10	28.10		31.05	35.05		x30			108.30			129.60	x15		54.25		67.00		
x 9	26.25	30.70		34.30	38.75		x32			114.45			137.15	x16		57.25		70.00		
x10	28.40	33.30		36.45	41.35		x34			120.65			144.80	x17		60.30		74.35		
x11	30.60	35.95		39.75	45.10		x36			126.90			152.50	x18		63.35		77.40		
x12	32.85	38.60		42.00	47.75		x38			133.25			160.25	x19		66.40		81.75		
x13		41.30			51.60		41x 4	17.30	20.25		22.40	25.35		x20		69.50	86.55	84.85	101.90	
x14		44.00			54.30		x 5	19.55	23.00		25.85	29.30		x22		75.75	93.05	92.45	109.75	
x15		46.75			58.20		x 6	21.85	25.65		28.15	31.95		x24		82.05	99.55	100.10	117.60	
x16		49.50			60.95		x 7	24.20	28.40		31.60	35.80		x26			106.15		125.60	

Maximum and minimum Bores and Prices for Special Bores, page 368.

Cast Iron Pulleys—Continued

Diam. and Face	SOLID			SPLIT			Diam. and Face	SOLID			SPLIT			Diam. and Face	SOLID			SPLIT		
	Single Belt	Dbl. Belt	Dbl. Arm D. B.	Single Belt	Dbl. Belt	Dbl. Arm D. B.		Single Belt	Dbl. Belt	Dbl. Arm D. B.	Single Belt	Dbl. Belt	Dbl. Arm D. B.		Single Belt	Dbl. Belt	Dbl. Arm D. B.	Single Belt	Dbl. Belt	Dbl. Arm D. B.
43x28			112.75			133.60	45x16	61.00			74.45			47x 8	32.20	38.20		41.05	47.05	
x30			119.30			141.60	x17	64.25			79.05			x 9	34.90	41.50		45.05	51.65	
x32			125.95			149.70	x18	67.50			82.30			x10	37.60	44.80		47.75	54.95	
x34			132.65			157.90	x19	70.75			86.90			x11	40.35	48.10		51.80	59.55	
x36			139.35			166.10	x20	74.05	92.30		90.20	108.45		x12	42.75	51.45		54.20	62.90	
x38			146.10			174.30	x22	80.70	99.20		98.25	116.75		x13		54.80			67.30	
x40			152.90			182.75	x24	87.50	106.15		106.45	125.10		x14		58.15			70.65	
44x 4	19.30	22.65		25.15	28.50		x26		113.10			133.50		x15		61.55			75.70	
x 5	21.75	25.65		28.90	32.80		x28		120.10			141.95		x16		64.95			79.10	
x 6	24.20	28.65		31.35	35.80		x30		127.10			150.45		x17		68.40			83.95	
x 7	26.70	31.65		35.05	40.00		x32		134.15			159.00		x18		71.85			87.40	
x 8	29.25	34.65		37.60	43.00		x34		141.25			167.65		x19		75.35			92.30	
x 9	31.80	37.70		41.40	47.30		x36		148.40			176.35		x20		78.85	98.80		95.80	115.75
x10	34.30	40.75		43.90	50.30		x38		155.60			185.05		x22		85.95	105.80		104.35	124.20
x11	36.80	43.80		47.65	54.65		x40		162.90			194.05		x24		93.10	113.20		112.95	133.05
x12	39.30	46.85		50.15			46x 4	20.80	24.35		27.05	30.60		x26			120.55			141.50
x13	49.95			61.80			x 5	23.35	27.50		30.95	35.10		x28			127.95			150.80
x14	53.05			64.90			x 6	25.95	30.65		33.55	38.25		x30			135.40			159.80
x15	56.15			69.60			x 7	28.55	33.85		37.40	42.70		x32			142.90			168.85
x16	59.25			72.70			x 8	31.20	37.05		40.05	45.90		x34			150.45			178.00
x17	62.40			77.20			x 9	33.85	40.25		44.00	50.40		x36			158.05			187.20
x18	65.55			80.35			x10	36.50	43.45		46.65	53.60		x38			165.70			196.40
x19	68.70			84.85			x11	39.15	46.70		50.60	58.15		x40			173.45			205.90
x20	71.80	89.65		87.95	105.80		x12	41.60	49.95		53.05	61.40		48x 4	22.40	26.10		29.05	32.75	
x22	78.25	96.35		95.80	113.90		x13		53.20			65.70		x 5	25.05	29.40		33.10	37.45	
x24	84.75	103.05		103.70	122.00		x14		56.50			69.00		x 6	27.75	32.75		35.80	40.80	
x26		109.90			130.30		x15		59.80			73.95		x 7	30.45	36.10		39.80	45.45	
x28		116.70			138.55		x16		63.10			77.25		x 8	33.20	39.45		42.55	48.80	
x30		123.50			146.85		x17		66.45			82.00		x 9	35.95	42.85		46.65	53.55	
x32		130.35			155.20		x18		69.80			87.75		x10	38.75	46.25		49.45	57.95	
x34		137.20			163.60		x19		73.15			90.10		x11	41.60	49.65		53.65	61.70	
x36		144.10			171.05		x20		76.55	95.60		93.50	112.55	x12	43.90	53.10		55.95	65.15	
x38		151.00			180.45		x22		83.40	102.75		101.80	121.15	x13		56.55			69.70	
x40		157.95			189.10		x24		90.30	109.90		110.15	129.75	x14		60.00			73.15	
45x 4	20.00	23.50		25.85	29.35		x26		117.05			138.40		x15		63.50			78.35	
x 5	22.50	26.55		29.65	33.70		x28		124.30			147.15		x16		67.00			81.85	
x 6	25.05	29.60		32.20	36.75		x30		131.45			155.85		x17		70.55			86.85	
x 7	27.60	32.65		35.95	41.00		x32		138.65			164.60		x18		74.10			90.40	
x 8	30.20	35.75		38.55	44.10		x34		145.85			173.40		x19		77.70			95.45	
x 9	32.80	38.85		42.40	48.45		x36		153.05			182.20		x20		81.30	101.75		99.05	119.50
x10	35.40	41.95		45.00	51.55		x38		160.25			190.95		x22		88.60	109.25		107.85	128.50
x11	37.95	45.10		48.80	55.95		x40		167.40			199.85		x24		95.95	116.80		116.70	137.45
x12	40.45	48.25		51.30	59.10		47x 4	21.60	25.20		27.85	31.45		x26			124.40			146.70
x13		51.40			63.25		x 5	24.20	28.45		31.80	36.05		x28			132.00			155.85
x14		54.60			66.45		x 6	26.85	31.70		34.45	39.30		x30			139.65			165.10
x15		57.80			71.25		x 7	29.50	34.95		38.35	43.80		x32			147.35			174.40

Larger sizes to 120 inches diameter quoted or furnished.

Maximum and minimum Bores and prices for Special Bores, page 368.

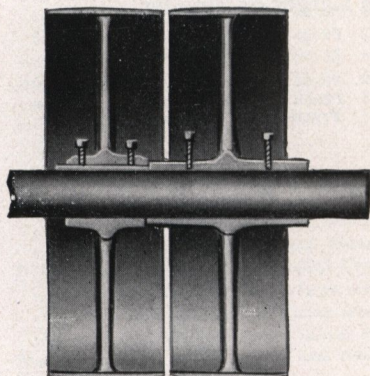


Fig. 3670. Tight and Loose Pulleys

Tight and Loose Cast Iron Pulleys

Additional Prices to be Added to List Prices of Two Standard Pulleys
to Obtain List Price Per Pair of Tight and Loose Pulleys

Diameter Inches	Face, Inches							
	3 and 4	5 and 6	7 and 8	9 and 10	11 and 12	13 and 14	15 and 16	
6 to 9	1.30	2.00	3.00	4.50	.....	.....	.....	
10 to 15	1.50	2.30	3.40	5.00	7.00	.....	.....	
16 to 20	2.10	2.90	4.00	5.50	7.50	.....	.....	
21 to 30	3.30	4.10	5.20	6.80	9.10	12.50	.....	
31 to 42	4.50	5.50	6.90	9.00	12.10	16.50	23.00	
43 to 60	6.00	7.40	9.30	12.00	15.80	21.00	29.00	

Cast Iron Pulleys

(Continued)

Finished Cast Iron Flange Pulleys

Made With One, Two or Three Flanges

Additional Prices to be Added to List Prices of Standard Pulleys to Obtain

List Prices of Double Flange Pulleys

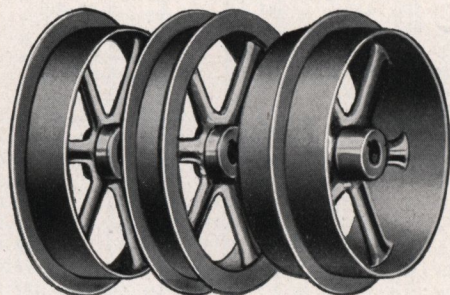


Fig. 3681. Flange Pulleys

Diameter Inches	List Price	Diameter Inches	List Price	Diameter Inches	List Price
6—7	2.40	34—35	20.05	76—78	73.75
8—9	3.10	36—37	21.95	80—82	79.30
10—11	3.90	38—39	24.10	84—86	84.75
12—13	4.70	40—41	26.35	88—90	90.10
14—15	5.65	42—43	28.75	92—94	95.40
16—17	6.60	44—45	31.30	96—98	100.85
18—19	7.60	46—47	33.85	100—102	106.00
20—21	8.80	48—50	37.60	104—106	111.80
22—23	10.15	52—54	42.25	108—110	117.15
24—25	11.50	56—58	47.20	112—114	122.35
26—27	13.05	60—62	52.25	116—118	127.35
28—29	14.70	64—66	57.50	120	132.05
30—31	16.40	68—70	62.85	.....	.....
32—33	18.20	72—74	68.30	.....	.....

For pulleys with but one flange add one-half above list.

For pulleys with three flanges add one and one-half above list.

Cast Iron Clamp Hub Pulleys

Clamp Hub Pulleys possess several advantages over the ordinary solid pulley, especially where a "forcing fit" is desirable, as a clamp hub is a practical substitute for a "forcing fit."

They can be clamped firmly to place on shaft and there is no danger of their working out of position. Moving from one position to another on shaft is easily accomplished by wedging the hub apart, thereby enlarging bore.

List price for Clamp Hub Pulley is obtained by adding to list price of solid pulley one-half of the difference between solid and split pulley lists.

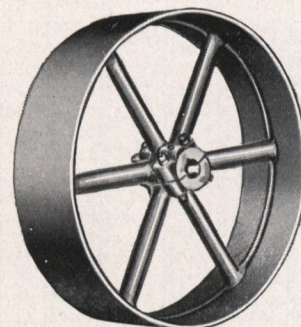


Fig. 3682. Clamp Hub Pulley

Maximum and Minimum Bores

As the cost of pulleys is materially increased by bores disproportionate to their diameters, it has been found advisable to tabulate the minimum and maximum limits of bores in standard transmission pulleys.

Pulleys with bores either smaller or larger than standard limits will be subject to an extra charge.

Additional Prices to be Added to Cost of Pulleys With Bores Larger or Smaller Than Standard Bore Limits

Diameter of Pulleys Inches	Maximum Bore Inches	Add for Each Additional					Minimum Bore Inches	For Smaller Bores Add
		1/4 Inch or Fraction	1/2 Inch or Fraction	1 Inch or Fraction	1 1/2 Inch or Fraction	2 Inch or Fraction		
6—	2	10%	.....	.....	.....	.....	1 5/16	10%
7— 8 incl.	2 1/4	10%	.....	.....	.....	.....	1 5/16	10%
9—	2 1/2	10%	.....	.....	.....	.....	1 5/16	10%
10— 12 incl.	2 3/4	10%	.....	.....	.....	.....	1 5/16	10%
13— 18 incl.	3	10%	10%	.....	.....	.....	1 5/16	5%
19— 30 incl.	3 1/2	.....	10%	.....	.....	.....	1 5/16	5%
31— 42 incl.	4	.....	5%	.....	.....	.....	1 5/16	5%
43— 54 incl.	4 1/2	.....	5%	.....	.....	.....	2 1/16	5%
55— 56 incl.	5	.....	.....	5%	.....	.....	2 1/16	5%
67— 68 incl.	6	.....	.....	5%	.....	.....	2 1/16	5%
79— 80 incl.	7	.....	.....	.....	5%	.....	2 1/16	5%
91— 92 incl.	8	.....	.....	.....	5%	.....	3 1/16	5%
103—104 incl.	9	.....	.....	.....	.....	5%	3 1/16	5%

American Wrought Steel Split Pulleys

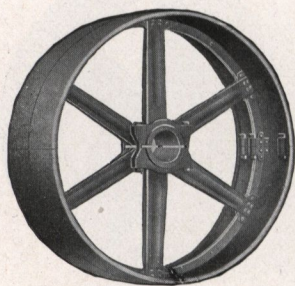


Fig. 3690

Sizes 6 to 24 Inch
Narrow Faces Above 16 Inch

Pulleys to run Tight and Loose are furnished in all diameters. They are equipped with split loose bushings and patent lubricator or self-oiling bushings. Orders for Tight and Loose Pulleys should specify which style is preferred.

Interchangeable Bushings

A complete stock of bushings is carried. One bushing furnished with each pulley without charge. Additional bushings furnished at low rates.

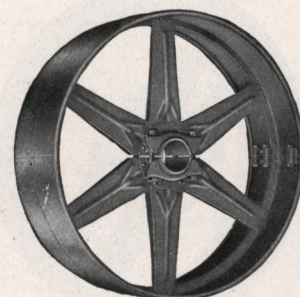


Fig. 3691

Sizes 16 to 24 Inch
Wide Faces. Same Design
All Faces 25 to 42 Inch

Diam. In.	2	3	4	5	6	8	10	12	14	16	18	20	22	24	26	28	30
3	2.28	2.40	2.52	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4	2.40	2.52	2.64	2.75	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5	2.52	2.64	2.75	2.87	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
6	3.15	3.30	3.45	3.75	4.05	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
7	3.22	3.38	3.60	3.90	4.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
8	3.30	3.45	3.75	4.05	4.35	4.95	5.60	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
9	3.38	3.60	3.90	4.20	4.50	5.10	5.75	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
10	3.45	3.75	4.05	4.35	4.65	5.25	5.90	6.45	.....	.....	.....	.....	.....	.....	.....	.....	.....
11	3.65	3.90	4.20	4.50	4.80	5.40	6.00	6.90	.....	.....	.....	.....	.....	.....	.....	.....	.....
12	3.90	4.20	4.63	4.80	5.33	5.78	6.45	7.65	9.00	10.25	.....	.....	.....	.....	.....	.....	.....
13	4.05	4.35	4.80	5.20	5.62	6.43	7.20	8.40	9.50	10.75	.....	.....	.....	.....	.....	.....	.....
14	4.20	4.50	5.20	5.65	6.15	7.05	8.03	9.00	10.00	11.25	.....	.....	.....	.....	.....	.....	.....
15	4.35	4.65	5.45	5.80	6.55	7.65	8.80	9.75	10.75	12.00	.....	.....	.....	.....	.....	.....	.....
16	4.50	4.95	5.75	6.10	6.90	8.25	9.45	10.50	11.50	12.65	.....	.....	.....	.....	.....	.....	.....
17	.....	5.25	6.00	6.50	7.28	8.78	10.05	11.25	12.40	13.65	.....	.....	.....	.....	.....	.....	.....
18	.....	5.55	6.38	7.00	7.65	9.30	10.65	12.00	13.25	14.50	.....	.....	.....	.....	.....	.....	.....
19	.....	5.80	6.75	7.50	8.25	10.13	11.25	12.90	14.20	15.60	.....	.....	.....	.....	.....	.....	.....
20	.....	6.00	7.50	8.10	9.00	10.73	12.00	14.25	15.30	16.90	18.59	.....	.....	.....	.....	.....	.....
21	.....	6.25	8.00	8.90	9.60	11.25	12.98	15.60	18.00	20.55	22.60	.....	.....	.....	.....	.....	.....
22	.....	6.50	8.55	9.50	10.28	12.00	14.10	16.80	19.50	21.30	23.43	.....	.....	.....	.....	.....	.....
23	.....	7.00	8.70	9.90	10.58	12.60	14.75	18.00	21.00	24.30	26.73	.....	.....	.....	.....	.....	.....
24	.....	7.50	8.90	10.00	10.95	13.20	15.68	19.05	22.65	26.25	29.92	34.50	.....	.....	.....	.....	.....
25	.....	.....	9.20	.....	11.45	13.80	16.40	20.20	24.50	29.25	35.05	39.50	.....	.....	.....	.....	.....
26	.....	.....	9.55	.....	11.95	14.40	17.10	21.30	26.25	31.20	36.15	41.40	.....	.....	.....	.....	.....
28	.....	.....	10.80	.....	12.90	15.45	18.15	22.90	28.50	34.50	40.35	46.35	.....	.....	.....	.....	.....
30	.....	.....	12.00	.....	14.10	17.25	19.90	24.75	31.50	38.10	45.00	49.50	55.50	61.50	67.50	74.25	81.67
32	.....	.....	13.20	.....	15.45	19.35	22.50	26.86	34.15	41.65	48.37	54.37	60.37	66.37	72.37	79.60	87.56
34	.....	.....	14.40	.....	17.25	21.75	25.50	30.00	36.75	45.00	51.75	57.45	63.75	69.75	75.00	82.50	90.75
36	.....	.....	15.90	.....	19.50	24.00	28.65	33.75	39.75	48.60	55.50	61.50	67.50	73.50	79.50	87.45	96.19
38	.....	.....	19.50	.....	21.75	26.40	31.05	37.15	42.75	51.75	58.87	64.87	70.87	76.87	82.87	91.15	100.26
40	.....	.....	21.00	.....	24.00	28.50	33.75	40.15	46.50	55.15	62.25	69.75	77.25	84.75	92.55	101.80	111.98
42	.....	.....	23.25	.....	26.25	32.25	37.50	43.50	50.25	57.75	65.62	73.12	80.62	88.12	95.62	105.18	115.69
44	.....	.....	.....	.....	29.25	35.62	41.25	47.25	54.00	61.12	69.00	78.00	87.00	96.00	105.00	115.50	127.05
46	.....	.....	.....	.....	33.00	39.00	45.00	50.25	57.75	64.50	72.00	81.00	90.00	99.00	108.00	118.80	130.68
48	.....	.....	.....	.....	36.75	42.00	48.75	54.00	61.50	67.50	75.00	87.00	99.00	111.00	123.00	135.30	148.83
50	.....	.....	.....	.....	40.87	47.25	53.25	58.50	66.00	75.00	84.00	96.00	108.00	120.00	132.00	145.20	159.72
52	.....	.....	.....	.....	46.50	51.00	57.00	63.00	69.00	78.75	90.00	102.00	114.00	126.00	138.00	151.80	166.98
54	.....	.....	.....	.....	50.25	56.25	61.50	67.50	74.25	83.25	96.75	108.75	120.75	132.75	144.75	159.22	175.14
56	.....	.....	.....	.....	54.00	60.75	66.75	72.75	80.25	90.00	104.25	119.25	134.25	149.25	164.25	180.67	198.73
58	.....	.....	.....	.....	60.00	65.25	71.25	78.37	86.62	96.37	110.62	125.62	140.62	155.62	170.62	187.68	206.44
60	.....	.....	.....	.....	63.75	70.50	77.25	84.00	93.00	102.75	117.00	132.00	147.00	162.00	177.00	194.70	214.17

How to Order Pulleys

Specify diameter, face, bore, and whether Crown or Straight face.

If pulleys are ordered without either Crown or Straight face being specified, they will be supplied Crown.

For non-shifting belts Crown faces are the best.

For tight and loose pulleys Crown faces are the best.

When a belt is to be shifted on the face of one pulley, running first on one side of the center and then on the other, specify a Straight face.

These pulleys can be bushed down to any size of shaft.

To Find Size of Pulleys or Speed of Shaft Use the Following Rules:

The size of Driving Pulley is found by multiplying the diameter of the driven by its revolutions per minute, and dividing the product by the revolutions of the driver.

The size of the Driven Pulley is found by multiplying the diameter of the driver by its revolutions per minute, and dividing the product by the revolutions of the driven.

The revolutions per minute of a Driven Shaft are found by multiplying the diameter of the driving pulley by its revolutions per minute, and dividing the product by the diameter of the driven pulley.

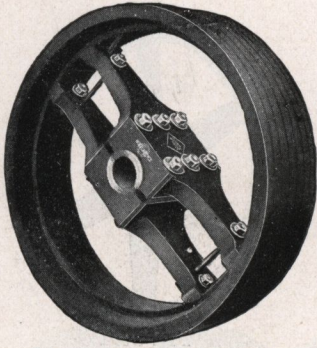


Fig. 3700. 9 to 36-inch

Wood Split Pulleys

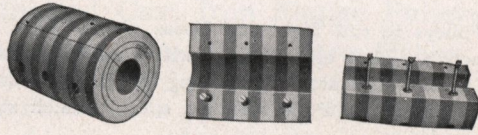


Fig. 3701

Sizes up to and including 8-inch

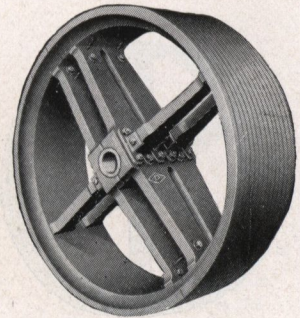


Fig. 3702. 38 inches and over

Diameter Inches	Width of Face, Inches												
	3	4	5	6	8	10	12	14	16	18	20	22	24
4	2.80	2.90	3.10	3.30	3.70	4.10	4.50	.....	.....	.....	.....	.....	.....
5	2.85	2.95	3.20	3.40	3.85	4.30	4.75	.....	.....	.....	.....	.....	.....
6	2.90	3.00	3.25	3.50	4.00	4.50	5.00	.....	.....	.....	.....	.....	.....
7	2.95	3.05	3.35	3.60	4.15	4.70	5.25	5.80	.....	.....	.....	.....	.....
8	3.00	3.10	3.40	3.70	4.30	4.90	5.50	6.10	.....	.....	.....	.....	.....
9	3.10	3.25	3.60	3.90	4.55	5.20	5.85	6.50	.....	.....	.....	.....	.....
10	3.25	3.40	3.75	4.10	4.80	5.50	6.20	6.90	7.60	.....	.....	.....	.....
11	3.50	3.70	4.10	4.50	5.30	6.10	6.90	7.70	8.50	.....	.....	.....	.....
12	3.75	4.00	4.45	4.90	5.80	6.70	7.60	8.50	9.40	10.30	.....	.....	.....
13		4.30	4.80	5.30	6.30	7.30	8.30	9.30	10.30	11.30	.....	.....	.....
14		4.60	5.15	5.70	6.80	7.90	9.00	10.10	11.20	12.30	13.40	.....	.....
15		4.90	5.50	6.10	7.30	8.50	9.70	10.90	12.10	13.30	14.50	.....	.....
16		5.20	5.85	6.50	7.80	9.10	10.40	11.70	13.00	14.30	15.60	16.90	.....
17		5.50	6.20	6.90	8.30	9.70	11.10	12.50	13.90	15.30	16.70	18.10	.....
18		5.80	6.55	7.30	8.80	10.30	11.80	13.30	14.80	16.30	17.80	19.30	20.80
19		6.10	6.90	7.70	9.30	10.90	12.50	14.10	15.70	17.30	18.90	20.50	22.10
20		6.40	7.25	8.10	9.80	11.50	13.20	14.90	16.60	18.30	20.00	21.70	23.40
22		7.00	7.95	8.90	10.80	12.70	14.60	16.50	18.40	20.30	22.20	24.10	26.00
24		7.70	8.80	9.90	12.10	14.30	16.50	18.70	20.90	23.10	25.30	27.50	29.70
26		8.40	9.65	10.90	13.40	15.90	18.40	20.90	23.40	25.90	28.40	30.90	33.40
28		9.10	10.50	11.90	14.70	17.50	20.30	23.10	25.90	28.70	31.50	34.30	37.10
30		9.80	11.35	12.90	16.00	19.10	22.20	25.30	28.40	31.50	34.60	37.70	40.80
32		10.50	12.20	13.90	17.30	20.70	24.10	27.50	30.90	34.30	37.70	41.10	44.50
34		11.30	13.15	15.00	18.70	22.40	26.10	29.80	33.50	37.20	40.90	44.60	48.30
36		12.10	14.10	16.10	20.10	24.10	28.10	32.10	36.10	40.10	44.10	48.10	52.10
38				17.20	21.50	25.80	30.10	34.40	38.70	43.00	47.30	51.60	55.90
40				18.30	22.90	27.50	32.10	36.70	41.30	45.90	50.50	55.10	59.70
42				19.60	24.60	29.60	34.60	39.60	44.60	49.60	54.60	59.60	64.60
44				20.90	26.30	31.70	37.10	42.50	47.90	53.30	58.70	64.10	69.50
46				22.30	28.10	33.90	39.70	45.50	51.30	57.10	62.90	68.70	74.50
48				23.80	30.00	36.20	42.40	48.60	54.80	61.00	67.20	73.40	79.60
50				25.40	32.00	38.60	45.20	51.80	58.40	65.00	71.60	78.20	84.80
52				27.10	34.10	41.10	48.10	55.10	62.10	69.10	76.10	83.10	90.10
54				28.90	36.30	43.70	51.10	58.50	65.90	73.30	80.70	88.10	95.50
56				30.80	38.60	46.40	54.20	62.00	69.80	77.60	85.40	93.20	101.00
58				32.80	41.00	49.20	57.40	65.60	73.80	82.00	90.20	98.40	106.60
60				34.90	43.50	52.10	60.70	69.30	77.90	86.50	95.10	103.70	112.30
62				37.10	46.10	55.10	64.10	73.10	82.10	91.10	100.10	109.10	118.10
64				39.40	48.80	58.20	67.60	77.00	86.40	95.80	105.20	114.60	124.00
66				41.90	51.80	61.70	71.60	81.50	91.40	101.30	111.20	121.10	131.00
68				44.50	54.90	65.30	75.70	86.10	96.50	106.90	117.30	127.70	138.10
70				47.20	58.10	69.00	79.90	90.80	101.70	112.60	123.50	134.40	145.30
72				50.00	61.40	72.80	84.20	95.60	107.00	118.40	129.80	141.20	152.60
78					71.90	84.80	97.70	110.60	123.50	136.40	149.30	162.20	175.10
84					83.30	97.70	112.10	126.50	140.90	155.30	169.70	184.10	198.50
90					95.60	111.50	127.40	143.30	159.20	175.10	191.00	206.90	222.80
96					109.00	126.50	144.00	161.50	179.00	196.50	214.00	231.50	249.00
102					123.70	143.00	162.30	181.60	200.90	220.20	239.50	258.80	278.10
108					139.30	160.40	181.50	202.60	223.70	244.80	265.90	287.00	308.10
114					155.80	178.70	201.60	224.50	247.40	270.30	293.20	316.10	339.00
120					173.20	197.90	222.60	247.30	272.00	296.70	321.40	346.10	370.80

Pulleys Listed Above are Standard Sizes and Bored as Follows:

Diameter Inches	Bore Inches	Diameter Inches	Bore Inches
3	1½	24 to 48	3½
4	2	50 to 72	4½
5 to 7	2½	*72	4½
8 to 23	3		

*Up to 12-inch Face

With interchangeable bushings. One pair of bushings furnished without charge with each pulley above, to bush same to proper shaft size.

Falls Disc Clutches

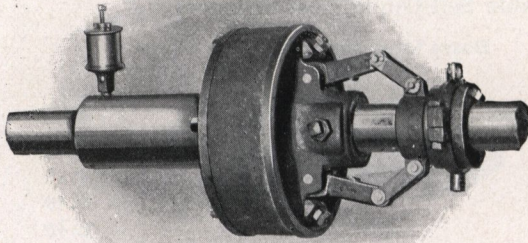


Fig. 3710. Disc Clutch

Made with extended sleeves to which cast wood or steel pulleys may be fitted, also sprockets, gears, etc.

Their simplicity and metal distribution for strength and durability will appeal to users of clutches. All parts are easy of access and can be readily adjusted and repaired should they become worn.

Number of Clutch	Horse-power at 100 R. P. M.	Total Space on Shaft Inches	List Price
8	5	18	30.00
10	10	22 $\frac{5}{8}$	40.00
12	15	25 $\frac{1}{8}$	50.00

Multi-Band or Hub Friction Clutch

Especially adapted for single belt or other light service such as driving countershafts for mangles, printing presses, lathes, etc.

Designed to fill a demand for a cheap yet effective method of stopping and starting machinery without the shifting or throwing off of belts, the principle being to grip the hub of driven member by means of a series of bands carried and actuated on the driving member.

Makes a very powerful, cheap and simple method of transmitting power from a rotating part to a non-rotating part.

Made for all pulley diameters 6 inch to 30 inch, and widths to 8 inches.

Prices on application.

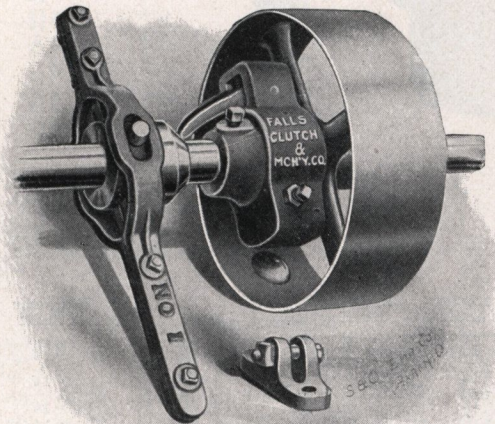


Fig. 3711. Hub Friction Clutch

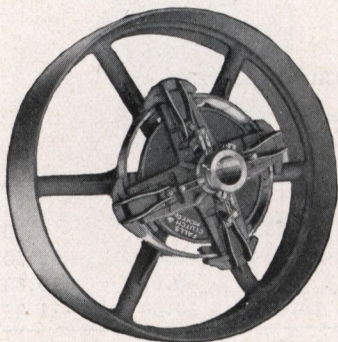


Fig. 3712. Friction Clutch Pulley

Friction Clutch Pulleys and Couplings

These clutches can be furnished with four or six arms, according to amount of power to be transmitted.

They are the most powerful made and can be furnished in all sizes and for all conditions.

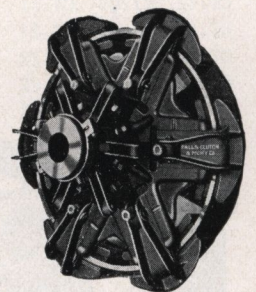


Fig. 3713. Friction Clutch Coupling

Orders or inquiries for Friction Clutch Pulleys and Cut-off Couplings should specify: Diameter of pulley and width of face. Amount of power to be transmitted. Speed at which the pulley or coupling is to run. Exact diameter of shafting. A wire template should be sent to show the latter in all cases when shafting is not furnished by us. Every Clutch Pulley will transmit the power of the belt. Quoted no application.

Self-Oiling Shaft Hangers

Adjustable Self-Oiling Post Hanger

Boxes Interchangeable

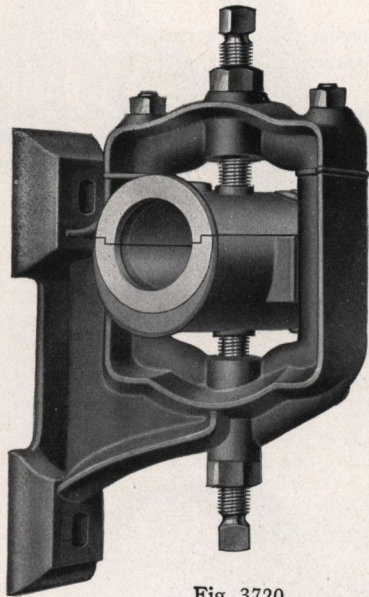


Fig. 3720

Diameter of Shaft	Length of Bearing	Distance from Foot to Center	Price
$1\frac{3}{16}$	5	4	3.80
$1\frac{7}{16}$	6	$4\frac{5}{8}$	4.30
$1\frac{11}{16}$	7	$4\frac{5}{8}$	5.40
$1\frac{15}{16}$	8	$5\frac{1}{2}$	6.40
$2\frac{3}{16}$	9	$5\frac{1}{2}$	8.10
$2\frac{7}{16}$	10	$6\frac{5}{8}$	10.20
$2\frac{11}{16}$	11	$6\frac{5}{8}$	12.90
$2\frac{15}{16}$	12	$8\frac{1}{8}$	16.20
$3\frac{3}{16}$	13	$8\frac{1}{8}$	20.70
$3\frac{7}{16}$	14	$9\frac{5}{8}$	26.20
$3\frac{11}{16}$	15	$9\frac{5}{8}$	32.10
$3\frac{15}{16}$	16	11	38.00
$4\frac{3}{16}$	16	11	44.25
$4\frac{7}{16}$	16	$13\frac{1}{4}$	50.50
$4\frac{15}{16}$	18	$13\frac{1}{4}$	64.50
$5\frac{7}{16}$	20	$15\frac{1}{4}$	78.50

Adjustable Self-Oiling Pedestal

Boxes Interchangeable

Diameter of Shaft	Length of Bearing	Price	Diameter of Shaft	Length of Bearing	Price
$1\frac{5}{16}$	4	3.90	$2\frac{15}{16}$	12	16.90
$1\frac{3}{16}$	5	4.20	$3\frac{3}{16}$	13	21.10
$1\frac{5}{16}$	5	4.50	$3\frac{7}{16}$	14	25.30
$1\frac{7}{16}$	6	4.80	$3\frac{11}{16}$	15	30.60
$1\frac{11}{16}$	7	5.90	$3\frac{15}{16}$	16	35.80
$1\frac{15}{16}$	8	7.40	$4\frac{3}{16}$	16	41.70
$2\frac{3}{16}$	9	9.30	$4\frac{7}{16}$	16	47.60
$2\frac{7}{16}$	10	11.30	$4\frac{15}{16}$	18	60.50
$2\frac{11}{16}$	11	13.80	$5\frac{7}{16}$	20	75.50

These Pedestals can be used as short drop hangers by inverting the box.

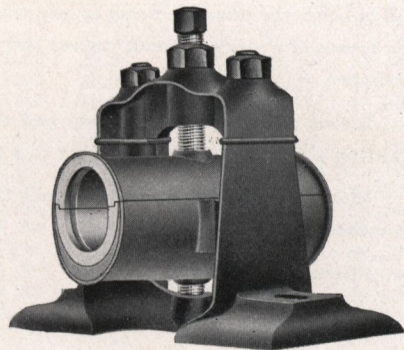


Fig. 3721

Adjustable Self-Oiling Bracket Hanger

Boxes Interchangeable

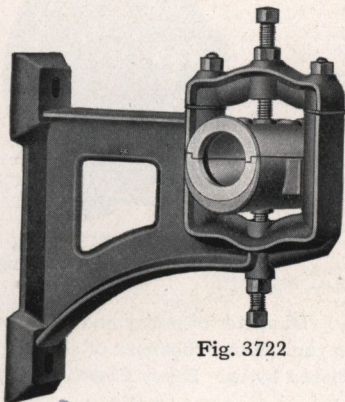


Fig. 3722

Diameter	Reach, Inches					
	8	10	12	14	16	18
$1\frac{7}{16}$	6.10	6.50	6.85	7.20	7.60	8.00
$1\frac{11}{16}$	6.55	6.95	7.30	7.65	8.00	8.50
$1\frac{15}{16}$	8.15	8.55	9.00	9.45	9.90	10.60
$2\frac{3}{16}$	8.85	9.25	9.70	10.15	10.60	11.25
$2\frac{7}{16}$	12.60	13.00	13.50	14.05	14.70	15.30
$2\frac{11}{16}$	13.50	13.90	14.40	14.95	15.60	16.20
$2\frac{15}{16}$	17.15	17.55	18.25	18.90	19.80	20.70
$3\frac{7}{16}$	21.30	21.70	25.20	26.10	27.45	28.80

Fig. 3720, 3721, 3722 can be furnished with Ring Oiling Bearings when preferred. Same list prices apply.

Rigid Pillow Block
Plain Bearings

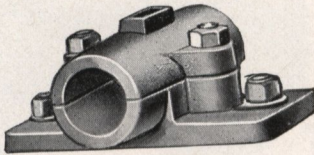


Fig. 3730
Rigid Pillow Blocks

Solid Journal and Post Box
Babbitted

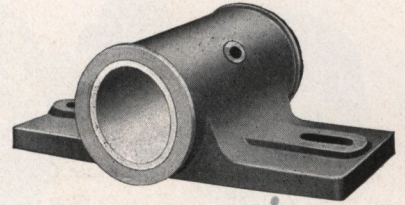


Fig. 3731
Solid Journal and Post Boxes

Diameter of Shaft	Length of Bearing	Price	Diameter of Shaft	Length of Bearing	Price	Diameter of Shaft	Price	Length of Bearing
$\frac{15}{16}$	$3\frac{1}{8}$	1.30	$3\frac{11}{16}$	$12\frac{1}{4}$	10.10	$\frac{15}{16}$	.95	3
$1\frac{3}{16}$	4	1.60	$3\frac{13}{16}$	13	11.50	$1\frac{3}{16}$	1.20	$3\frac{3}{4}$
$1\frac{7}{16}$	$4\frac{3}{4}$	2.00	$4\frac{1}{16}$	14	13.25	$1\frac{7}{16}$	1.50	$4\frac{1}{2}$
$1\frac{11}{16}$	$5\frac{3}{4}$	2.65	$4\frac{7}{16}$	15	15.00	$1\frac{11}{16}$	1.80	$5\frac{1}{4}$
$1\frac{15}{16}$	$6\frac{3}{8}$	3.35	$4\frac{15}{16}$	18	19.00	$1\frac{15}{16}$	2.10	6
$2\frac{3}{16}$	$7\frac{1}{4}$	4.00	$5\frac{1}{16}$	19	23.50	$2\frac{3}{16}$	2.70	$6\frac{3}{4}$
$2\frac{7}{16}$	8	4.80	$5\frac{15}{16}$	20	28.50	$2\frac{7}{16}$	3.20	$7\frac{3}{8}$
$2\frac{11}{16}$	9	5.65	$6\frac{1}{16}$	20	34.00			
$2\frac{15}{16}$	$9\frac{3}{4}$	6.70	$6\frac{15}{16}$	$20\frac{1}{4}$	40.00			
$3\frac{3}{16}$	$10\frac{1}{2}$	7.75	$7\frac{1}{16}$	21	47.00			
$3\frac{7}{16}$	$11\frac{1}{2}$	8.90	$7\frac{15}{16}$	22	55.00			

Adjustable Double Braced Self-Oiling Drop Hangers
Boxes Interchangeable

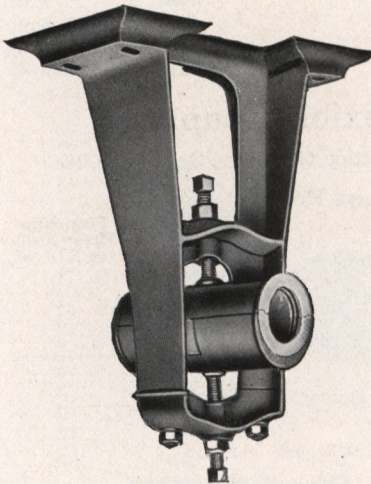


Fig. 3732. Drop Hangers

Length of Bearing	Diameter of Shafting	Range of Drop, Inches							
		6 to 8	$8\frac{1}{2}$ to 10	$10\frac{1}{2}$ to 12	$12\frac{1}{2}$ to 14	$14\frac{1}{2}$ to 16	$16\frac{1}{2}$ to 18	$18\frac{1}{2}$ to 20	$20\frac{1}{2}$ to 22
4	$1\frac{5}{16}$	3.20	3.65	4.30	4.90	5.35	5.70	6.00	6.10
5	$1\frac{3}{16}$	3.85	4.30	4.70	5.20	5.60	6.00	6.15	6.25
5	$1\frac{5}{16}$	4.15	4.60	5.10	5.60	5.90	6.10	6.30	6.50
6	$1\frac{7}{16}$	4.50	4.95	5.35	5.85	6.25	6.40	6.70	6.90
7	$1\frac{11}{16}$	5.20	5.60	6.00	6.50	6.90	7.00	7.30	7.50

Length of Bearing	Diameter of Shafting	7 to 9	10 to 12	13 to 15	16 to 18	19 to 21	22 to 24	25 to 27	28 to 30
		6.95	7.60	8.25	8.90	9.55	10.20	10.85	11.70
8	$1\frac{5}{16}$	8.45	9.35	10.15	10.80	11.50	12.50	13.40	14.25
9	$2\frac{3}{16}$	10.55	11.20	12.00	13.00	14.00	15.10	16.10	17.85
10	$2\frac{7}{16}$	13.15	13.80	15.35	16.00	16.90	18.30	20.15	22.75
11	$2\frac{11}{16}$	15.60	16.75	18.05	19.25	20.15	21.80	23.40	26.30
12	$2\frac{15}{16}$	17.00	19.80	21.20	22.40	23.40	25.35	26.95	29.90
13	$3\frac{3}{16}$	.....	25.35	27.30	28.90	30.20	32.50	34.45	37.70
14	$3\frac{7}{16}$	.....	31.20	33.15	34.80	36.10	38.35	40.95	42.90
16	$3\frac{15}{16}$	.....	42.25	42.90	43.85	45.50	47.45	50.05	53.30
16	$4\frac{7}{16}$	.....	46.80	48.75	51.00	53.95	57.85	63.05	68.90
18	$4\frac{15}{16}$	.....							

These Hangers are readily convertible into floor stands by simply inverting the boxes.

Beam Clamps
Made to fit all sizes of I-Beams

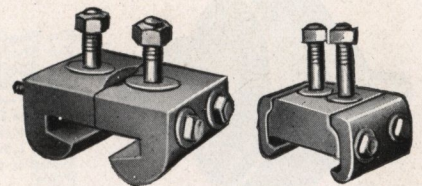


Fig. 3733. Beam Clamps

Each, all sizes..... 3.00

Shaft Couplings and Collars

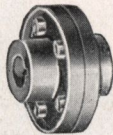


Fig. 3740

Flange-Faced or Plate Couplings

Diameter of Shaft	Price Per Pair	
	Fitted to Shaft	Not Fitted to Shaft
1 $\frac{3}{16}$	7.00	4.00
1 $\frac{7}{16}$	8.00	5.00
1 $\frac{11}{16}$	8.50	5.50
1 $\frac{15}{16}$	9.00	6.00
2 $\frac{3}{16}$	10.50	7.00
2 $\frac{7}{16}$	12.50	8.50
2 $\frac{11}{16}$	15.25	10.75
2 $\frac{15}{16}$	18.25	13.25
3 $\frac{3}{16}$	21.75	15.25
3 $\frac{7}{16}$	25.25	18.25
3 $\frac{11}{16}$	29.25	21.25
3 $\frac{15}{16}$	33.25	24.75
4 $\frac{7}{16}$	43.25	34.25
4 $\frac{11}{16}$	54.75	44.25
5 $\frac{7}{16}$	67.00	53.50
5 $\frac{15}{16}$	81.00	64.00
6 $\frac{7}{16}$	95.50	78.50
6 $\frac{15}{16}$	110.00	92.00
7 $\frac{7}{16}$	126.00	107.50
7 $\frac{15}{16}$	142.00	123.00
8 $\frac{7}{16}$	160.00	140.50
8 $\frac{15}{16}$	180.00	160.00
9 $\frac{7}{16}$	200.00	180.00

Reduction Flanged-Faced Couplings.—When shafts of different diameters are connected with couplings of this kind, price of the pair will be the same as if both shafts were of the larger diameter.



Fig. 3741

Compression Couplings

Diameter of Shaft	Price	Diameter of Shaft	Price
1 $\frac{15}{16}$	5.00	3 $\frac{3}{16}$	20.00
1 $\frac{3}{16}$	5.50	3 $\frac{7}{16}$	24.00
1 $\frac{5}{16}$	5.70	3 $\frac{11}{16}$	28.00
1 $\frac{7}{16}$	6.00	3 $\frac{15}{16}$	32.00
1 $\frac{11}{16}$	7.00	4 $\frac{7}{16}$	42.00
1 $\frac{15}{16}$	8.00	4 $\frac{15}{16}$	53.00
2 $\frac{3}{16}$	9.00	5 $\frac{7}{16}$	65.00
2 $\frac{7}{16}$	10.75	5 $\frac{15}{16}$	78.00
2 $\frac{11}{16}$	13.00	6 $\frac{7}{16}$	90.00
2 $\frac{15}{16}$	16.50	6 $\frac{15}{16}$	112.00

Reduction Compression Couplings.—For connecting shafts of different diameters, same price as plain compression couplings for shafting of the larger size.

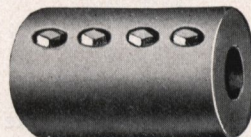


Fig. 3742. Sleeve Couplings

Diameter of Shaft	Price	Diameter of Shaft	Price
1 $\frac{3}{4}$	3.00	1 $\frac{7}{16}$	5.00
1	3.75	1 $\frac{11}{16}$	5.60
1 $\frac{1}{16}$	4.40	1 $\frac{15}{16}$	6.25

Falls Flexible Coupling

For the Direct Connection of Motors, Generators, etc.

List Prices

No. of Couplings	Diameter of Shaft	Price	Maximum Horse-power 100 R. P. M.
2	$\frac{3}{4}$ to 1 $\frac{1}{4}$	17.10	1
4	1 $\frac{1}{4}$ to 1 $\frac{3}{4}$	23.40	2
5	1 $\frac{1}{2}$ to 2	30.60	3
6	1 $\frac{3}{4}$ to 2 $\frac{1}{4}$	34.00	4
7	2 to 2 $\frac{1}{2}$	38.55	5
9	2 $\frac{1}{4}$ to 3	45.50	8
11	2 $\frac{3}{4}$ to 3 $\frac{1}{2}$	64.25	10
13	3 $\frac{1}{4}$ to 4	82.25	12
15	3 $\frac{3}{4}$ to 4 $\frac{1}{2}$	125.15	15

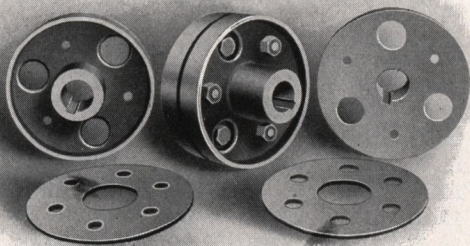


Fig. 3743. Flexible Coupling

Shaw Compression Flange Coupling

Single Compression

For Shaft	$\frac{7}{8}$	1	1 $\frac{1}{8}$	1 $\frac{1}{4}$	1 $\frac{3}{8}$	1 $\frac{1}{2}$	1 $\frac{5}{8}$	1 $\frac{3}{4}$	2 $\frac{1}{8}$	2 $\frac{1}{4}$	2 $\frac{3}{8}$	2 $\frac{1}{2}$
For Shaft	$\frac{1}{8}$	....	1 $\frac{1}{8}$	....	1 $\frac{1}{4}$	....	1 $\frac{3}{8}$	....	1 $\frac{1}{2}$	....	1 $\frac{3}{4}$	....
For Shaft	....	....	1 $\frac{1}{4}$	....	1 $\frac{1}{2}$	....	1 $\frac{3}{4}$	....	2	....	2 $\frac{1}{2}$	....
For Shaft	....	....	1 $\frac{1}{4}$	....	....	....	1 $\frac{1}{4}$	....	2	....	2 $\frac{1}{2}$	....
Outside Diameter of Shell	4 $\frac{7}{8}$	4 $\frac{7}{8}$	4 $\frac{7}{8}$	5 $\frac{1}{4}$	5 $\frac{1}{4}$	6	7 $\frac{1}{2}$	7 $\frac{1}{2}$	8 $\frac{1}{8}$	8 $\frac{1}{8}$	9 $\frac{1}{8}$	....
Length of Sleeve	3 $\frac{3}{8}$	3 $\frac{3}{8}$	4	4 $\frac{1}{2}$	5 $\frac{1}{4}$	5 $\frac{1}{4}$	7 $\frac{1}{2}$	8 $\frac{1}{8}$	8 $\frac{1}{8}$	9 $\frac{1}{8}$	9 $\frac{1}{8}$	....
Total Length of Coupling	3 $\frac{3}{8}$	3 $\frac{3}{8}$	4	4 $\frac{1}{2}$	5 $\frac{1}{4}$	5 $\frac{1}{4}$	7 $\frac{1}{2}$	8 $\frac{1}{8}$	8 $\frac{1}{8}$	9 $\frac{1}{8}$	9 $\frac{1}{8}$	....
Weight, pounds	6	6	8	9	13	15	32	35	43	54	54	....
Price	3.00	4.25	4.75	5.00	5.50	6.25	8.00	9.00	10.75	13.00	16.00	....

Reducing Couplings, advance 10 per cent on above prices. The larger shaft which the coupling fits determines the size.

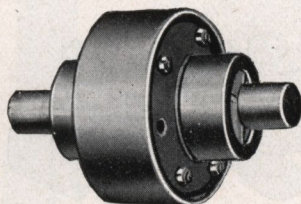


Fig. 3744

Double Flange Safety Set Collars

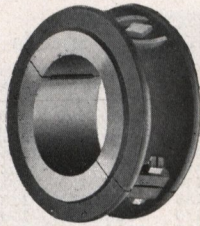


Fig. 3750. Split

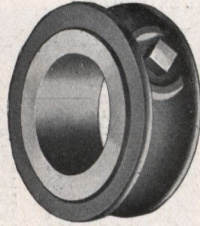


Fig. 3751. Solid

Safety Set Collars

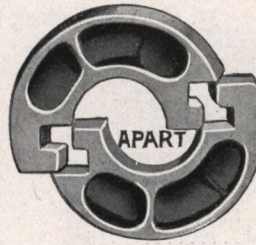


Fig. 3752. Split

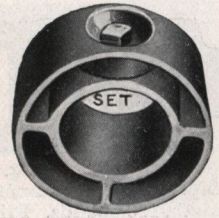


Fig. 3753. Solid

Diameter of Shaft	Price Solid Collar	Diameter of Shaft	Price Split Collar	Diameter of Shaft	Price Solid Collar	Diameter of Shaft	Price Split Collar
$1\frac{5}{16}$	.70	$1\frac{5}{16}$	1.00	$1\frac{5}{16}$	.70	$1\frac{5}{16}$	1.00
$1\frac{3}{8}$	.80	$1\frac{3}{8}$	1.20	$1\frac{3}{8}$	.80	$1\frac{3}{8}$	1.20
$1\frac{1}{2}$	.90	$1\frac{1}{2}$	1.35	$1\frac{1}{2}$	.90	$1\frac{1}{2}$	1.35
$1\frac{7}{16}$	1.00	$1\frac{7}{16}$	1.50	$1\frac{7}{16}$	1.00	$1\frac{7}{16}$	1.50
$1\frac{1}{2}$	1.20	$1\frac{1}{2}$	1.80	$1\frac{1}{2}$	1.20	$1\frac{1}{2}$	1.80
$1\frac{13}{16}$	1.40	$1\frac{13}{16}$	2.10	$1\frac{13}{16}$	1.40	$1\frac{13}{16}$	2.10
$2\frac{3}{16}$	1.60	$2\frac{3}{16}$	2.40	$2\frac{3}{16}$	1.60	$2\frac{3}{16}$	2.40
$2\frac{1}{2}$	1.80	$2\frac{1}{2}$	2.70	$2\frac{1}{2}$	1.80	$2\frac{1}{2}$	2.70
$2\frac{11}{16}$	2.10	$2\frac{11}{16}$	3.15	$2\frac{11}{16}$	2.10	$2\frac{11}{16}$	3.15
$2\frac{5}{8}$	2.40	$2\frac{5}{8}$	3.60	$2\frac{5}{8}$	2.40	$2\frac{5}{8}$	3.60
$3\frac{3}{16}$	2.70	$3\frac{3}{16}$	4.00	$3\frac{3}{16}$	2.70	$3\frac{3}{16}$	4.00
$3\frac{1}{2}$	3.00	$3\frac{1}{2}$	4.50	$3\frac{1}{2}$	3.00	$3\frac{1}{2}$	4.50
$3\frac{11}{16}$	3.30	$3\frac{11}{16}$	4.95	$3\frac{11}{16}$	3.30	$3\frac{11}{16}$	4.95
$3\frac{15}{16}$	3.60	$3\frac{15}{16}$	5.40	$3\frac{15}{16}$	3.60	$3\frac{15}{16}$	5.40
$4\frac{1}{8}$	4.70	$4\frac{1}{8}$	7.05	$4\frac{1}{8}$	4.70	$4\frac{1}{8}$	6.00
$4\frac{1}{2}$	5.90	$4\frac{1}{2}$	8.85	$4\frac{1}{2}$	5.90	$4\frac{1}{2}$	7.35
$5\frac{1}{8}$	7.20	$5\frac{1}{8}$	10.80	$5\frac{1}{8}$	7.20	$5\frac{1}{8}$	10.80
$5\frac{1}{2}$	8.60	$5\frac{1}{2}$	12.90	$5\frac{1}{2}$	8.60	$5\frac{1}{2}$	12.90
$6\frac{1}{8}$	10.10	$6\frac{1}{8}$	15.15	$6\frac{1}{8}$	10.10	$6\frac{1}{8}$	15.15
$6\frac{1}{2}$	12.70	$6\frac{1}{2}$	19.05	$6\frac{1}{2}$	12.70	$6\frac{1}{2}$	19.00

Shifting Fixtures

For Countershaft Hangers

These Attachments can be applied to any style of Hanger

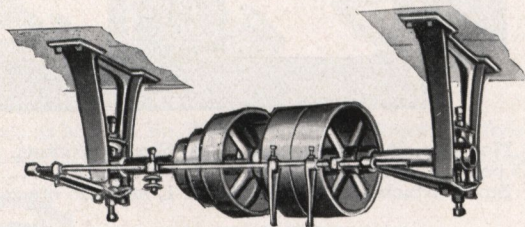


Fig. 3754. Showing Fixtures in Position

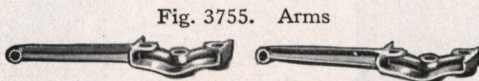


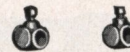
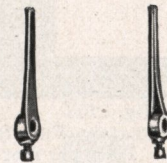
Fig. 3755. Arms



Fig. 3759. Rod

Size	Complete Attachment
$1\frac{5}{16}$ to $1\frac{5}{16}$	4.50
$1\frac{3}{8}$ to $1\frac{3}{4}$	5.00
$1\frac{1}{2}$ to $2\frac{1}{16}$	6.00
$2\frac{3}{8}$ to $2\frac{1}{2}$	7.40
$2\frac{3}{4}$ to $3\frac{3}{16}$	9.40
$3\frac{1}{4}$ to $3\frac{1}{2}$	10.40

Fig. 3756. Fingers

Fig. 3757
CollarsFig. 3758
Clamp

Fixtures Without Arms	Price Per Arm
2.50	1.00
2.50	1.30
2.50	1.80
2.50	2.50
2.50	3.50
2.50	5.00

Detachable Link Chains

Chains are Interchangeable with Other Makes of Standard Link Chains
of Corresponding Styles and Numbers

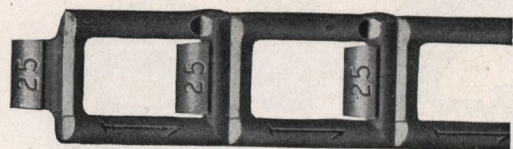


Fig. 3760

No. 25—(Approximately Full Size)—Working strength, 120 pounds. Price per foot.15
Stock Attachments—A-3, C-1, K-1, and others.

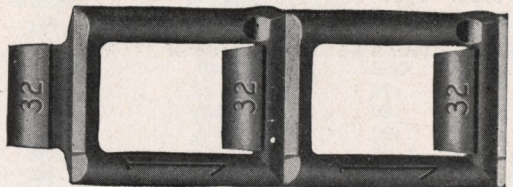


Fig. 3761

No. 32—(Approximately Full Size)—Working strength, 185 pounds. Price per foot.15
Stock attachments—C-1, K-1, and also others.

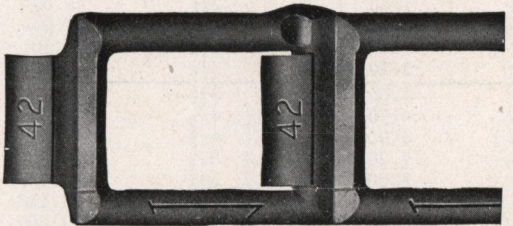


Fig. 3762

No. 42—(Approximately Full Size)—Working strength, 250 pounds. Price per foot.17
Stock Attachments—A-1, C-1, K-1, and also others.

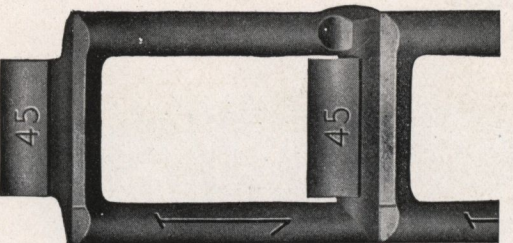


Fig. 3763

No. 45—(Approximately Full Size)—Working strength, 265 pounds. Price per foot.15
Stock Attachments—A-1, A-3, D-5, F-2, G-1, K-1, K-5, and others.

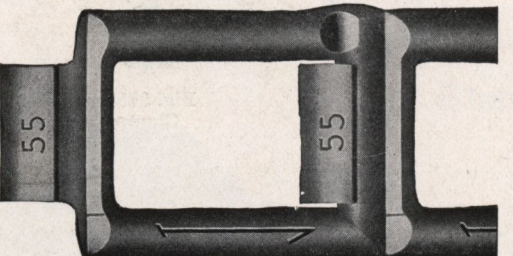


Fig. 3764

No. 55—(Approximately Full Size)—Working strength, 370 pounds. Price per foot.18
Stock Attachments—A-1, A-3, F-2, K-1, and also others.

List Prices—Working Strength—Speeds

Chain No.	Plain Chain Per Foot	Couplers Per Pair	Approx. Links in 10 Feet	Working Strengths† For Speeds in Feet Per Minute						
				150 Feet	200 Feet	300 Feet	400 Feet	500 Feet	600 Feet	700 Feet
*25	.15	.15	133	120	114	102	90	78	66	54
*32	.15	.18	104	185	176	157	139	120	102	83
33	.15	.17	86	200	190	170	150	130	110	90
34	.15	.17	86	215	204	183	161	140	118	97
35	.15	.20	74	200	190	170	150	130	110	90
*42	.17	.21	88	250	238	213	188	163	138	113
45†	.15	.20	74	265	252	225	199	172	146	119
51	.21	.20	104	315	299	268	237	205	173	142
*52	.20	.18	80	385	366	327	289	250	212	173
*55†	.18	.18	74	370	352	315	278	241	204	167
57†	.20	.21	52	470	447	400	353	306	259	212
*62	.25	.25	73	515	489	438	386	335	283	232
66	.26	.25	60	435	413	370	326	283	239	
67†	.26	.25	52	555	527	472	416	361	305	
75	.27	.21	46	670	637	570	503	436	369	
77†	.28	.25	52	600	570	510	450	390	330	
*78†	.38	.28	46	815	774	693	611	530	448	
83	.39	.36	30	825	784	701	619	536		
*88†	.49	.49	30	1265	1202	1075	949	822		
93	.48	.31	46	960	912	816	720	624	528	
95	.54	.49	30	1250	1188	1063	938	813		
95	.59	.60	30	1450	1378	1233	1088	943		
*103†	.74	.64	39	1600	1520	1360	1200	1040		
104½	1.02	1.03	26	1915	1819	1628	1436			
108†	.70	.87	25½	1650	1568	1403	1238			
110	.82	1.02	25½	2115	2009	1798	1586			
*114	.94	.93	37	1835	1743	1560	1376	1193		
122	1.25	1.24	20	2500	2375	2125				
*124	1.14	1.31	30	2115	2009	1798	1586			
146	1.13	1.42	20	2335	2218	1985				

Heavy Lines Indicate Speed Limits

BOLD FACE TYPE indicates STANDARD PLAIN CHAINS, CARRIED IN STOCK.

*Preferred Chains for Transmissions of Power.

†Preferred Chains for Attachments.

‡For rough service and shocks, use 50 per cent of Working Strengths and Speed Limits.

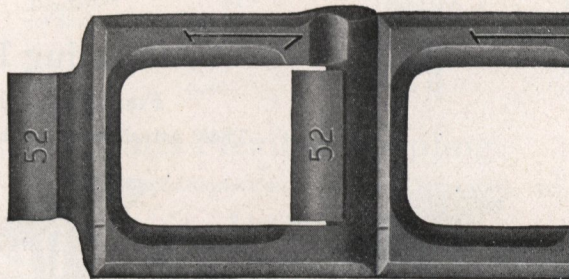


Fig. 3765

No. 52—(Approximately Full Size)—Working strength, 385 pounds. Price per foot.20
Stock Attachments—A-1, F-2, K-1, and also others.

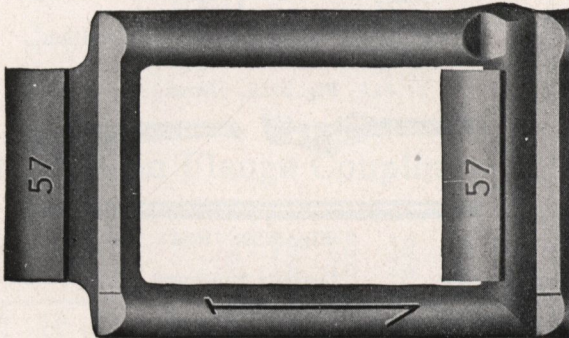


Fig. 3766

No. 57—(Approximately Full Size)—Working strength, 470 pounds. Price per foot.20
Stock Attachments—A-1, F-2, H-2, K-1, and also others.

Detachable Link Chains

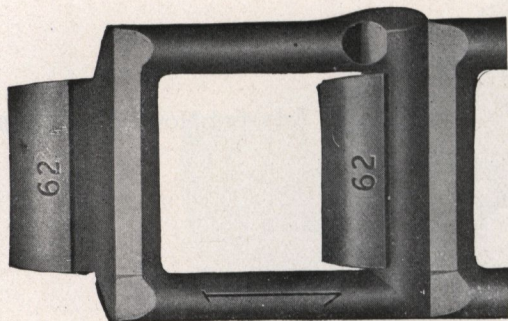


Fig. 3770

No. 62—(Approximately Full Size)—Working strength 515 pounds. Price per foot..... .25
Stock Attachments—A-1, A-3, C-1, D-5, K-1, and also others

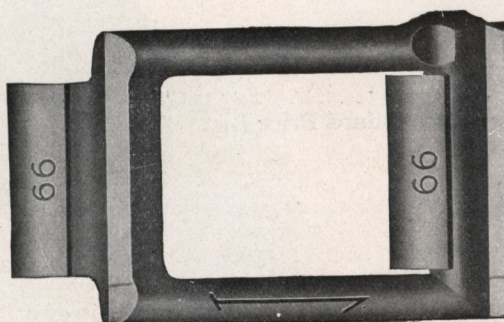
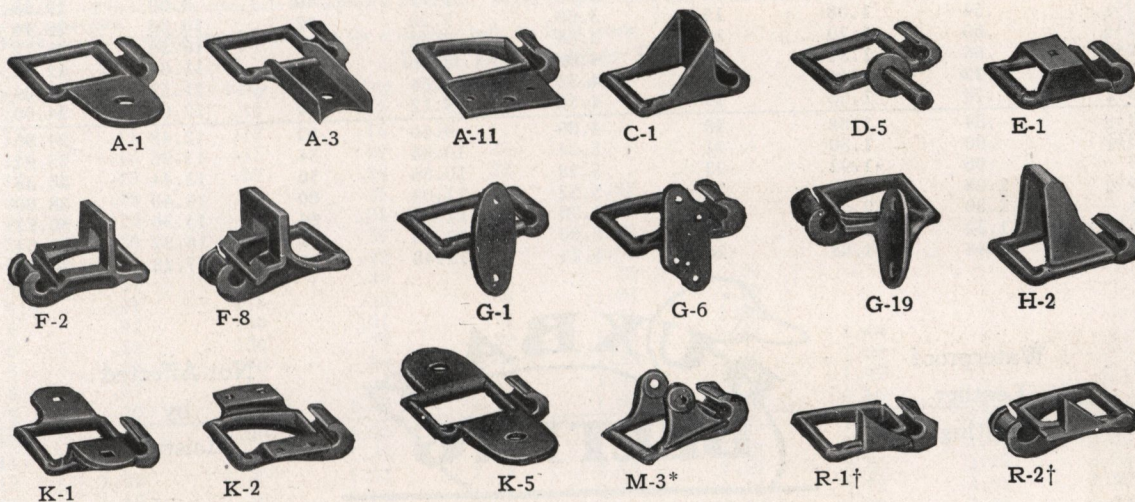


Fig. 3771

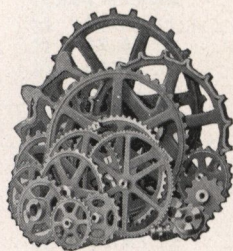
No. 66—(Approximately Full Size)—Working strength, 435 pounds. Price per foot..... .26

Attachments for Detachable Chains

Standard Attachments—Carried in Stock



Known as M-1 on No. 25, 33, 45 and 55 Chains. †Made Right and Left Hand.
Prices will be furnished upon application. Standard Attachments not listed above, made on order.



Standard Sprocket Wheels

Unless otherwise ordered, Jeffrey Sprocket Wheels are made of high-grade refined Cast Iron. We are also prepared to furnish wheels in Charcoal Iron, Semi-Steel, Cast Steel, Manganese Steel, Malleable Iron, Brass and Bronze.

Sprocket Wheels

Bored, Keyseated, Set-screwed

Prices will be furnished upon application.



Hardened or Chilled Rim Sprocket Wheels by the J-CO Process

The J-CO Process of casting renders the rim and teeth of the sprockets extremely hard and flintlike, to a depth of about $\frac{3}{8}$ inch. The wearing surface is exceptionally smooth—while an after treatment adds toughness and durability to the whole wheel.

Bulletins illustrating and describing our complete line of Chains, Sprockets, etc., will be mailed on request.

Balata Belting

Features

Great strength and durability.
Perfect uniformity throughout.
Complete immunity to water and steam.



Features

Strong gripping power, ensuring the transmission, positively without loss, of the whole power given off by the engine.

Entire absence of stretch and shrinkage.

Fig. 3800

Width	3 Ply	4 Ply	5 Ply	6 Ply	7 Ply	8 Ply	Width	3 Ply	4 Ply	5 Ply	6 Ply	7 Ply	8 Ply
1	.18	.24	....				7	1.26	1.68	2.10	2.52	2.94	3.36
1 1/4	.23	.30	....				7 1/2	1.35	1.80	2.25	2.70	3.15	3.60
1 1/2	.27	.36	....				8	1.44	1.92	2.40	2.88	3.36	3.84
1 3/4	.32	.42	.53				9	1.62	2.16	2.70	3.24	3.78	4.32
2	.36	.48	.60				10	1.80	2.40	3.00	3.60	4.20	4.80
2 1/4	.41	.54	.68				11	1.98	2.64	3.30	3.96	4.62	5.28
2 1/2	.45	.60	.75	....	....	....	12	2.16	2.88	3.60	4.32	5.04	5.76
2 3/4	.50	.66	.83	....	....	....	13	2.34	3.12	3.90	4.68	5.46	6.24
3	.54	.72	.90	....	....	....	14	2.52	3.36	4.20	5.04	5.88	6.72
3 1/4	.59	.78	.98	....	....	....	15	2.70	3.60	4.50	5.40	6.30	7.20
3 1/2	.63	.84	1.05	....	....	....	16	2.88	3.84	4.80	5.76	6.72	7.68
3 3/4	.68	.90	1.13	....	....	....	17	3.06	4.08	5.10	6.12	7.14	8.16
4	.72	.96	1.20	1.44	....	....	18	3.24	4.32	5.40	6.48	7.56	8.64
4 1/4	.77	1.02	1.28	1.53	....	....	19	3.42	4.56	5.70	6.84	7.98	9.12
4 1/2	.81	1.08	1.35	1.62	....	....	20	3.60	4.80	6.00	7.20	8.40	9.60
5	.90	1.20	1.50	1.80	....	....	21	3.78	5.04	6.30	7.56	8.82	10.08
5 1/2	.99	1.32	1.65	1.98	....	....	22	3.96	5.28	6.60	7.92	9.24	10.56
6	1.08	1.44	1.80	2.16	....	....	23	4.14	5.52	6.90	8.28	9.66	11.04
6 1/2	1.17	1.56	1.95	2.34	....	....	24	4.32	5.76	7.20	8.64	10.08	11.52

Note: Dick Belt is not recommended where temperature exceeds 110° F., nor where it is likely to become soaked with oil.

Table

Showing the horse-power which *each inch of width* of belting, from 3 Ply to 10 Ply, will transmit at the speed given.

Speed of Belt Per Minute	3 Ply Horse-power	4 Ply Horse-power	5 Ply Horse-power	6 Ply Horse-power	7 Ply Horse-power	8 Ply Horse-power	9 Ply Horse-power	10 Ply Horse-power
500	0.60	0.90	1.21	1.51	1.81	2.12	2.42	2.71
750	0.90	1.36	1.81	2.27	2.72	3.18	3.63	4.08
1000	1.21	1.81	2.42	3.03	3.63	4.24	4.84	5.44
1250	1.51	2.27	3.03	3.79	4.55	5.30	6.06	6.82
1500	1.81	2.72	3.63	4.55	5.45	6.36	7.27	8.17
1750	2.12	3.18	4.24	5.30	6.36	7.42	8.48	9.54
2000	2.42	3.63	4.85	6.06	7.27	8.48	9.70	10.90
2250	2.72	4.09	5.45	6.82	8.18	9.54	10.90	12.27
2500	3.03	4.54	6.06	7.58	9.10	10.60	12.12	13.64
2750	3.33	4.99	6.66	8.34	10.00	11.66	13.32	14.99
3000	3.63	5.44	7.26	9.10	10.90	12.72	14.52	16.34
3250	3.93	5.90	7.87	9.85	11.81	13.78	15.74	17.71
3500	4.24	6.36	8.48	10.60	12.72	14.84	17.96	19.08
3750	4.54	6.81	9.09	11.36	13.63	15.90	18.18	20.44
4000	4.84	7.27	9.70	12.12	14.54	16.96	19.40	21.81

To calculate the speed of a belt, multiply the number of revolutions made by the driving pulley by its diameter, and multiply the result by 3.1416 (or $3\frac{1}{4}$).

Example: 3-foot pulley making 213 revolutions per minute.

213 x 3 feet = 639 feet.

639 feet x 3.1416 = 2007.48 feet = Belt Speed per minute.

Thus—5-ply belt running on 3 foot pulley making 213 revolutions per minute will transmit 4.85 horse-power PER INCH OF WIDTH. (See 2000 feet Belt Speed.)

N. B.—These calculations are given for ordinary loads over pulleys of proper diameters; anything abnormal in a drive should be taken into account in specifying the belt required.

Round Belting on Spools (not Balata)

Made from choice center stock, firm and solid, thoroughly stretched, well rounded, full size.

Stock sizes, $\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$. Spools, 100 to 500 feet. Market prices.

Patent Solid Round Belting (not Balata)

This belting is carefully cemented in hydraulic press, then sewed with wire.

Size.....	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1
Per foot.....	.36	.38	.48	.60	.80	1.10

Moran Steel Belt Couplings

For Round Belts of Every Description. Sizes are Outside Diameters

Size.....	$\frac{1}{8}$	$\frac{5}{32}$	$\frac{3}{16}$	$\frac{7}{32}$	$\frac{1}{4}$	$\frac{9}{16}$	$\frac{5}{16}$	$\frac{11}{32}$	$\frac{3}{8}$
Per dozen pair.....	3.00	3.00	2.50	2.50	2.00	2.50	2.50	3.00	3.00
Size.....	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{11}{16}$	$\frac{3}{4}$	$\frac{7}{8}$	1	
Per dozen pair.....	3.50	4.00	5.00	6.00	7.50	9.00	13.00	18.00	

Stitched Canvas Belting

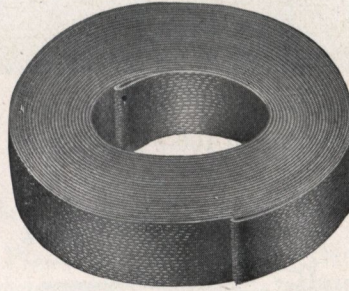


Fig. 3810. Canvas Belt

Width Inches	4-Ply	5-Ply	6-Ply	8-Ply	10-Ply
1	.12	....	....	....	....
1½	.18	....	....	....	....
2	.24	.30	.36	....	....
2½	.30	.38	.45	....	....
3	.35	.44	.53	....	....
3½	.39	.49	.59	....	....
4	.43	.54	.65	.86	....
4½	.47	.59	.71	.94	....
5	.51	.64	.77	1.02	....
6	.60	.75	.90	1.20	....
7	.70	.88	1.05	1.40	....
8	.80	1.00	1.20	1.60	....
9	.90	1.13	1.35	1.80	....
10	1.00	1.25	1.50	2.00	....
11	1.10	1.38	1.65	2.20	....
12	1.20	1.50	1.80	2.40	3.00
13	1.43	1.79	2.15	2.86	3.58
14	1.54	1.93	2.31	3.08	3.85
15	1.65	2.06	2.48	3.30	4.13
16	1.76	2.20	2.64	3.52	4.40
18	1.98	2.48	2.97	3.96	4.95
20	2.20	2.75	3.30	4.40	5.50
22	2.42	3.03	3.63	4.84	6.05
24	2.64	3.30	3.96	5.28	6.60

Extra charge for splice on endless belts.

Gandy Cotton Belting

Fig. 3811
Gandy Belt

4-Ply Equal to Single Leather		5-Ply		6-Ply Equal to Light Double Leather		8-Ply Equal to Heavy Double Leather		10-Ply	
Inch	Per Foot	Inch	Per Foot	Inch	Per Foot	Inch	Per Foot	Inch	Per Foot
1	.12	2	.30	2	.36	4	.86	12	3.00
1½	.18	2½	.38	2½	.45	4½	.94	14	3.85
2	.24	3	.44	3	.53	5	1.02	15	4.13
2½	.30	3½	.49	3½	.59	6	1.20	16	4.40
3	.35	4	.54	4	.65	7	1.40	18	4.95
3½	.39	4½	.59	4½	.71	8	1.60	20	5.50
4	.43	5	.64	5	.77	9	1.80	22	6.05
4½	.47	6	.75	6	.90	10	2.00	24	6.60
5	.51	7	.88	7	1.05	11	2.20	26	7.80
6	.60	8	1.00	8	1.20	12	2.40	28	8.40
7	.70	9	1.13	9	1.35	14	3.08	30	9.00
8	.80	10	1.25	10	1.50	15	3.30	32	9.60
9	.90	11	1.38	11	1.65	16	3.52	34	10.20
10	1.00	12	1.50	12	1.80	18	3.96	36	10.80
12	1.20	13	1.79	14	2.31	20	4.40	38	12.35
14	1.54	14	1.93	15	2.48	22	4.84	40	13.00
15	1.65	15	2.06	16	2.64	24	5.28	42	13.65
16	1.76	16	2.20	18	2.97	26	6.24	44	14.30
18	1.98	18	2.48	20	3.30	28	6.72	48	15.60
20	2.20	20	2.75	22	3.63	30	7.20	50	16.25
22	2.42	22	3.03	24	3.96	32	7.68	52	16.90
24	2.64	24	3.30	26	4.68	34	8.16	54	17.55
		26	3.90	28	5.04	36	8.64	56	18.20
		28	4.20	30	5.40	38	9.88	58	18.85
		30	4.50			40	10.40	60	19.50
						48	12.48		

To Find the Ply of a Gandy Belt of a Given Width Required

To economically transmit a given horse-power at a given belt speed: Multiply the given horse-power by 800, and the given width in inches by the given belt speed in feet, and divide the first result by the second.

If the final result is one or nearly one, a 4-ply belt is required; if one and one-half, a 6-ply belt is required; if one and three-quarters to two, an 8-ply belt is required; if two to two and one-quarter, a 10-ply belt is required.

Cut Lace Leather

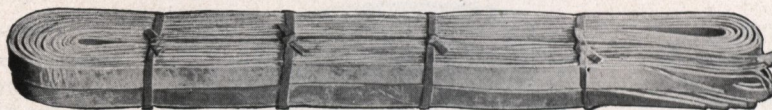


Fig. 3820. Cut Lace Leather

Put up in 100-Foot Bundles

Width, inches.....	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$
Price per bundle.....	2.50	3.00	3.75	4.50	5.50	6.50	7.50

Bristol's Steel Belt Lacing

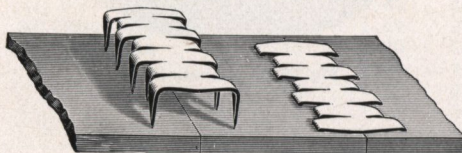
Staggered Point Style
(assorted widths)This style is adapted for
all kinds of belts.

Fig. 3821. Steel Belt Lacing

Each box contains (as-
sorted lengths) enough to
lace 100 inches in width of
belt.

Price List

Number.....	1100	110	110 $\frac{1}{2}$	111	112	113	114	115	117	119
Belt Thickness, inches.....	$\frac{1}{16}$ - $\frac{1}{8}$	$\frac{1}{8}$ - $\frac{5}{32}$	$\frac{5}{32}$ - $\frac{1}{4}$	$\frac{3}{16}$ - $\frac{1}{4}$	$\frac{1}{4}$ - $\frac{5}{16}$	$\frac{5}{16}$ - $\frac{3}{8}$	$\frac{3}{8}$ - $\frac{7}{16}$	$\frac{7}{16}$ - $\frac{9}{16}$	$\frac{1}{2}$ - $\frac{5}{8}$	$\frac{5}{8}$ - $\frac{13}{16}$
Price per box.....	.90	1.00	1.25	1.50	2.00	2.50	3.00	3.50	4.95	6.05

Note: Nos. 1100 and 110, for split leather and light rubber and cotton belts.
 No. 110 $\frac{1}{2}$ for ordinary single leather belts and 2-ply rubber and cotton belts.
 No. 111 for single leather and 3-ply rubber and cotton belts.
 No. 112 for extra heavy and wide single leather and 4-ply rubber and cotton belts.
 No. 113 for double leather and 5-ply rubber and cotton belts.
 No. 114 for heavy double leather and 6-ply rubber and cotton belts.
 No. 115 for extra heavy double leather and 7-ply rubber and cotton belts.
 No. 117 for conveyor belts and 8-ply rubber and cotton belts.
 No. 119 for 10-ply and extra heavy conveyor belts.

Kerr's Wire Belt Lacing

Made in sizes No. 00, 0, 1, 2, 3

Each size is packed in boxes containing 50 feet.

Sizes required for various belts:

No. 00 for light single belts up to 1 inch.

No. 0 for single belts up to 3 inches in width.

No. 1 for single belts, 3 to 6 inches in width.

No. 2 for single belts, 6 to 12 inches in width, and double belting up to 6 inches in width.

No. 3 for all double belts over 6 inches in width.

List price, all sizes, per 100 feet..... 2.00

Tool Set

Including Belt Punch, Combination Pliers and Nippers, Belt Marker and Belt Groover..... 1.50

This lacing is adapted for belts submitted to great strain and to those running at high speed over small pulleys. Does not stretch nor tear out laceholes.

(Showing Outside of
Belt)

(Showing Pulley Side of Belt)

Fig. 3822. Wire Belt Lacing

Single Leather

Number	Width Belt Inches	Per 100
1	1	1.50
2	1 $\frac{1}{2}$	2.00
3	2	2.50
4	2 $\frac{1}{2}$	3.00
5	3	3.50
6	3 $\frac{1}{2}$	4.50
7	4	5.50

Novelty Belt Hooks

Double Leather

Number	Width Belt Inches	Per 100
8	2	5.00
9	2 $\frac{1}{2}$	6.50
10	3	7.50
11	3 $\frac{1}{2}$	8.50
12	4	9.50

No.

Hooks Nos. 1 to 12 packed 50 in a box.

16 for 4 inch 4-ply rubber or canvas belts, 50 in box, per 100.....	9.50
22 for 3 inch 5-6-ply, rubber or canvas belts, 50 in box, per 100.....	10.00
23 for 4 inch 5-6-ply rubber or canvas belts, 50 in box, per 100.....	12.00
24 for 3 inch 7-8-ply rubber or canvas belts, 50 in box, per 100.....	12.00
25 for 4 inch 7-8-ply rubber or canvas belts, 50 in box, per 100.....	15.00
For Extra Heavy Leather Belts, special "A" teeth, $\frac{3}{4}$ -inch long, packed 25 in a box. Per 100.....	33.00

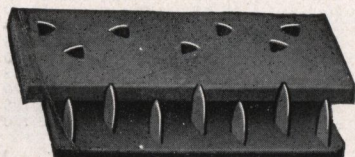


Fig. 3823. Novelty Belt Hooks

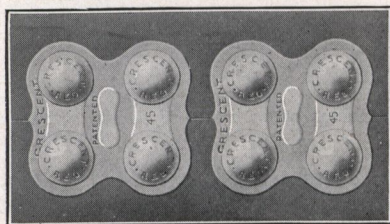
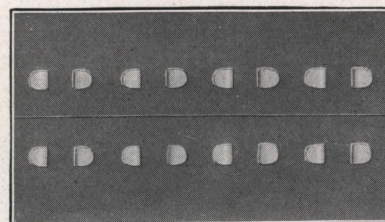


Fig. 3830. Crescent Belt Fastener

Crescent Belt Fasteners

Joint made with Crescent
Belt Fasteners



Pulley Side

Selection of Crescent Plates

For Light Work, Short Grip Plates

Belts $\frac{3}{4}$ to 3 inch. Pulleys 3 inches diameter and up

No. 25	Plate for $\frac{3}{4}$ and 1-Inch Belts, per gross	2.88
No. 45	Plate for $1\frac{1}{2}$ and 3-Inch Belt, per gross	5.76
No. 65	Plate for 2-Inch Belts, per gross	8.64
No. 85	Plate for $2\frac{1}{2}$ -Inch Belts, per gross	11.52
No. 805	Plate for 3-Inch Belts	11.52

For Heavy Work, Special Grip Plates

Special for Woven Belting, 2 to 8 inches wide
Pulleys 9 inches or larger diameter

No. 63	Plate Covers 2-Inch Belt Width, per gross	11.52
No. 83	Plate Covers $2\frac{1}{2}$ -Inch Belt Width, per gross	14.40
No. 103	Plate Covers 3-Inch Belt Width, per gross	17.28
No. 123	Plate Covers $3\frac{1}{2}$ -Inch Belt Width, per gross	20.16

For High Speeds and Motor Drives— High Speed Plates

Belts $\frac{3}{4}$ to 6 inches wide. Pulleys 2 inches and larger diam.

No. 20	Plate for $\frac{3}{4}$ and 1-Inch Belts, per gross	2.88
No. 40	Plate for 1 and 2-Inch Belts, per gross	5.76
No. 44	Plate for $1\frac{1}{2}$ and 3-Inch Belts, per gross	5.76
No. 60	Plate for 2 and 4-Inch Belts, per gross	8.64

Belts $1\frac{1}{2}$, 3, $4\frac{1}{2}$ and 6-Inch Belts.
Pulleys 4 inches or larger diameter.

No. 66	Plate Covers $1\frac{1}{2}$ -Inch Belt Width, per gross	8.64
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For General Work, Medium Grip Plates

Belts 2 to 6 inches wide. Pulleys 6 inches diameter and up

No. 67	Plate Covers $1\frac{1}{2}$ Inch Belt Width, per gross	8.64
No. 607	Plate Covers 2-Inch Belt Width, per gross	8.64
No. 87	Plate Covers $2\frac{1}{2}$ -Inch Belt Width, per gross	11.52
No. 107	Plate Covers 3-Inch Belt Width, per gross	14.40
No. 127	Plate Covers $3\frac{1}{2}$ -Inch Belt Width, per gross	17.28
No. 147	Plate Covers 4-Inch Belt Width, per gross	20.16

For Heavy Work—Long Grip Plates

Belts 6 to 72 inches wide

Pulleys 12 inches or larger diameter

No. 109	Plate Covers $2\frac{1}{2}$ -Inch Belt Width, per gross	17.28
No. 149	Plate Covers 3-Inch Belt Width, per gross	23.04
No. 1409	Plate Covers $3\frac{1}{2}$ -Inch Belt Width, per gross	25.92
No. 189	Plate Covers 4-Inch Belt Width, per gross	28.80

For Extremely Heavy Work— Jumbo Plates

For driving purposes, pulleys 36 inches or larger

For conveying purposes, pulleys 18 inches or larger

No. 1611	Plate Covers 3-Inch Belt Width, per gross	28.80
No. 2211	Plate Covers 4-Inch Belt Width, per gross	34.56

Crescent Rivets

Large Shank Rivets for Short, Medium, Special and Long Grip Plates

Order these Rivets $\frac{3}{16}$ Inch Longer than Belt Thickness



Fig. 3831

Length, inches	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{11}{16}$	$\frac{3}{4}$	$\frac{13}{16}$	$\frac{7}{8}$
Per gross	.70	.70	.80	.80	.90	.90	1.00	1.00	1.10	1.10

Small Shank Rivets for High Speed Plates

Order these Rivets $\frac{3}{16}$ Inch Longer than Belt Thickness



Fig. 3832

Length, inches	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{11}{16}$	$\frac{3}{4}$	$\frac{13}{16}$	$\frac{7}{8}$
Per gross	.50	.50	.55	.55	.60	.60				

Jumbo Rivets for Jumbo Plates

Order these Rivets $\frac{5}{16}$ Inch Longer than Belt Thickness

Length, inches	$\frac{11}{16}$	$\frac{3}{4}$	$\frac{13}{16}$	$\frac{1}{2}$	$\frac{11}{16}$	$\frac{3}{4}$	$\frac{13}{16}$	$\frac{7}{8}$	$\frac{15}{16}$	$\frac{1}{2}$
Per gross	1.25	1.40	1.40	1.55	1.55	1.70	1.70	1.85		

No. 79 Crescent Rivet Extractor, each .50

A Crescent Rivet Holder is included with each box of rivets without charge.

Gross of Rivets Required Per Gross of Plates

These Numbers Require Large Shank Rivets

No.	25	45	65	85	805	67	607	87	107	127	147	63	83	103	109	149	1409	189
Gross Rivets	2	4	6	8	8	6	6	8	10	12	14	6	8	10	10	14	14	18

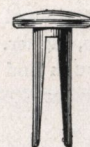
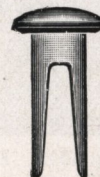
Small Shank Rivets

No.	20	40	44	60	65
Gross Rivets	2	4	4	6	6

Jumbo Plate No. 1611, 16 Gross Rivets. No. 2211, 22 Gross Rivets.

Note: A belt joined with Crescent Belt Fasteners can be easily and quickly shortened by removing the rivets from one end of the plate with a Crescent Extractor. Cut off the slack and rejoin in the usual manner, using a row of new rivets. These plates are indestructible and will outlast the life of a belt.

Crescent Belt Fasteners do not impair the belt in any way, and if it is necessary to disconnect a belt it can be done easily and rejoined at the same place.

Fig. 3832
Large ShankFig. 3833
Jumbo

Sheet Packings

Cloth Insertion Sheet Packing

Our stock grade combines smoothness of finish, strength of cloth insertion, pliability and durability.

Can be furnished in all thicknesses from $\frac{1}{32}$ to $\frac{1}{4}$ inch, inclusive. All cloth insertion or plain packing is one yard wide and any length desired. Made with one ply of cloth to every $\frac{1}{16}$ inch thickness.

This grade of packing will be found satisfactory for general conditions. For the more exacting duties we recommend our Namanco Red Sheet.

Price List

Thickness, inch.....	$\frac{1}{64}$	$\frac{1}{32}$	$\frac{1}{16}$	$\frac{3}{32}$	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{4}$
1-Ply, per pound....	.70	.65	.60	.55	.55	.55	.55
2-Ply, per pound....	...	...	.63	.58	.55	.55	.55
3-Ply, per pound....	...	...	.66	.61	.58	.55	.55
4-Ply per pound.....	...	...	...	...	.61	.58	.55

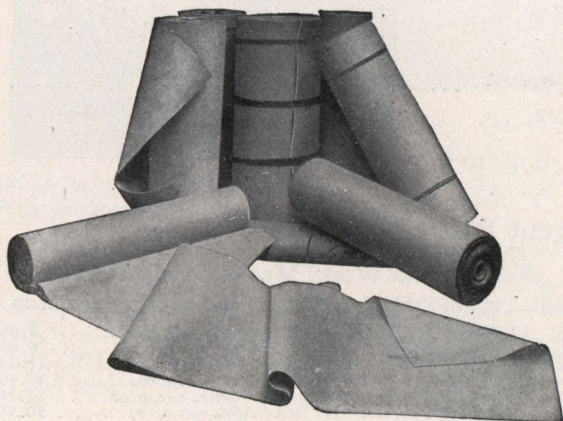


Fig. 3840
Cloth Insertion Sheet Packing

Namanco Red Sheet Packing

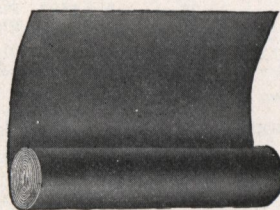


Fig. 3841. Namanco Red Sheet

Namanco Sheet enables us to furnish our patrons with a packing suitable for the more exacting steam and water pressures in standard service, and which, while vastly better than the competition sheet packings, can be supplied at a price little, if any, higher. Made from good reliable materials, and has proven a "happy medium" where the cheaper grades are not good enough and the higher grades too expensive.

Regular Stock $\frac{1}{16}$ and $\frac{1}{8}$ inch thick. Price per pound..... .80

Plumbago Sheet Packing

Self-vulcanizing. It will easily adapt itself to uneven surfaces. Not affected by oil or grease. It accommodates itself to inequalities of rough-faced flanges. It should be followed up when steam is first turned on, and the continued action of heat will vulcanize it hard.

Price per pound..... .80

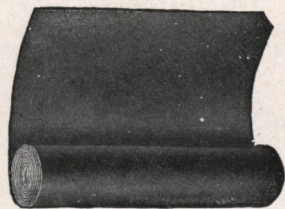


Fig. 3842. Plumbago Sheet

Pure Gum Sheet

Made from $\frac{1}{32}$ inch to 1 inch thick, in rolls 36 inches wide. Also furnished in slab form 36 inches square from $\frac{3}{8}$ inch to 1 inch thick.

We can furnish pure rubber in any quality desired and just the right degree of pliability and consistence to meet specific requirements.

Orders or inquiries for prices should state purpose for which it is to be used, to enable us to furnish material that will give satisfaction.

Price per pound..... 2.00

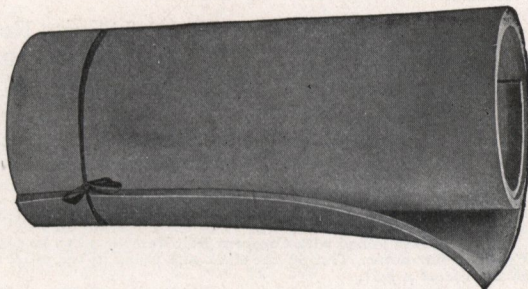


Fig. 3843. Pure Gum Sheet

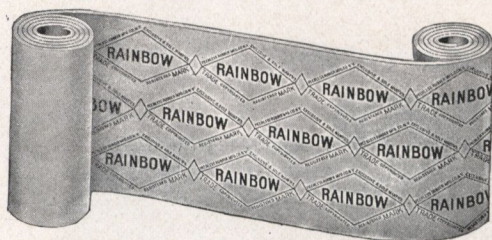


Fig. 3850. Rainbow Sheet Packing

Sheet Packings

Adapted for high pressure. Not affected by any degree of steam heat or by oils, ammonia, liquors or alkalis; will not harden, and will make an air, steam, hot or cold water joint equally well.

Joints should be faced with plumbago, lamp black or chalk; can be taken out and repeatedly replaced.

Standard width, 36 inches. Made any width up to 48 inches and in thickness, $\frac{3}{32}$, $\frac{1}{16}$, $\frac{3}{32}$, $\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$ inch.

Price per pound..... 1.00

Rainbow Packing

With Brass Wire Insertion

For high pressure steam, marine work and vibrating joints. Made in thicknesses $\frac{3}{64}$, $\frac{1}{16}$, $\frac{3}{32}$, $\frac{1}{8}$, $\frac{3}{16}$, and $\frac{1}{4}$ inch.

Price per pound..... 1.50

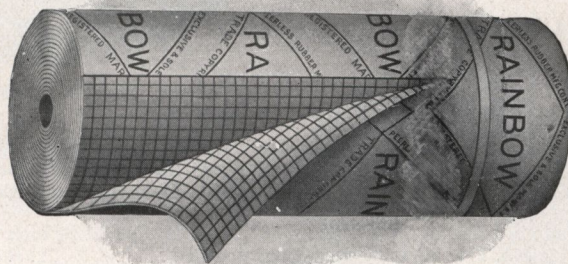


Fig. 3851. Rainbow Wire Insertion

Jenkins 96 Packing

For high temperatures and pressures with water, steam, acids, ammonia, etc.

Regularly made 36 inches wide.

Regular, per pound..... 1.00

With Steel Wire Insertion, per pound..... 1.00

With Brass Wire Insertion, per pound..... 1.25

Approximate Weights Per Square Yard

Thicknesses, inch.....	$\frac{3}{32}$	$\frac{1}{16}$	$\frac{3}{32}$	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{4}$
Regular, pounds.....	$2\frac{3}{4}$	$5\frac{1}{2}$	$8\frac{1}{4}$	11	$16\frac{1}{2}$	$22\frac{1}{2}$
Steel Wire, pounds.....	...	$6\frac{1}{2}$	$9\frac{1}{4}$	12	$17\frac{1}{2}$	$23\frac{1}{2}$
Brass Wire, pounds.....	...	8	$10\frac{3}{4}$	$13\frac{1}{2}$	19	25



Fig. 3852. Jenkins 96 Sheet Packing

Jenarco Sheet Packing

An extremely light and economical high grade vulcanized packing. Extremely tough and strong and makes an absolutely tight and durable steam joint between flanges either hot or cold. Not influenced by climatic conditions and does not deteriorate while in storage.

Prices and Weights

Same as listed for 96 Packing.

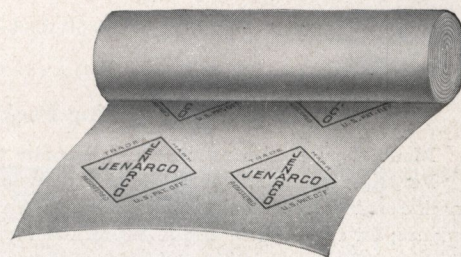


Fig. 3853. Jenarco Sheet

Eureka Red Sheet and Oil-proof Sheet Packing

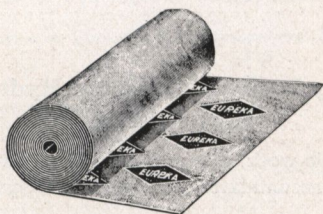


Fig. 3854. Eureka Red Sheet

A reliable packing guaranteed to make a perfect joint on steam, gas, air and ammonia. Made $\frac{1}{32}$ to $\frac{1}{4}$ inch thick.

Price per pound..... .80

Also with Brass Wire Insertion.

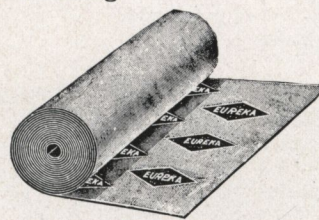


Fig. 3855. Oil-proof Sheet

A composition packing that will withstand the highest heat, acids, oils and hot liquids, and not blow out. Made $\frac{1}{32}$ to $\frac{1}{4}$ inch thick.

Price per pound..... 1.00

Ebonite Sheet Packing

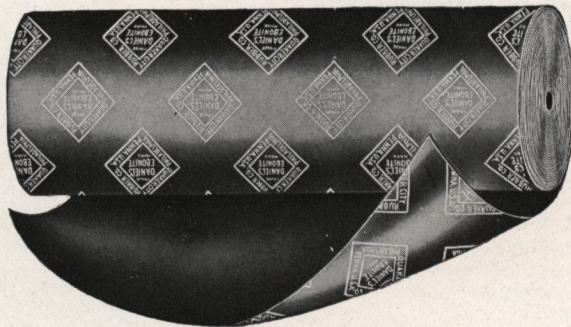


Fig. 3860. Ebonite Sheet Packing

This packing is made to meet the demand for a product of the highest grade. It is designed for high pressures, superheated steam, hot water, ammonia, oils and acids, and all other joints requiring packing. Especially adapted for vibrating joints and varying expansion. Does not tear with the taking apart of a joint and can be used again.

Made in rolls, 36 inches wide, $\frac{1}{32}$, $\frac{1}{16}$, $\frac{3}{32}$, $\frac{1}{8}$, $\frac{3}{16}$ and $\frac{1}{4}$ inch thick

Style No. 178, all thicknesses, per pound 1.00

Style No. 214, with wire insertion, $\frac{1}{16}$ inch and thicker, per pound 1.00

Style No. 1028, with Cloth Insertion, $\frac{1}{16}$ inch and thicker, per pound 1.00



Ebonite Spiral Packing

Especially designed for high pressure conditions. Core made from non-hardening Ebonite Compound. Outer covering made from specially prepared duck of superior quality. Only the finest and most suitable lubricant, which is absolutely free from grit or acids, is used.

Made in sizes $\frac{3}{16}$ inch and larger.

Style No. 188

Price per pound 1.00

Fig. 3861
Ebonite Spiral
Packing

High Pressure Ring Packing

Made of pure asbestos fibre with Ebonite Compound cushion.

For triple expansion and tandem compound engines, high pressure marine engines, steam-feeds, gas engines, locomotives and high speed engines; for superheated and high pressure steam and for rods running in oil, grease or acid.

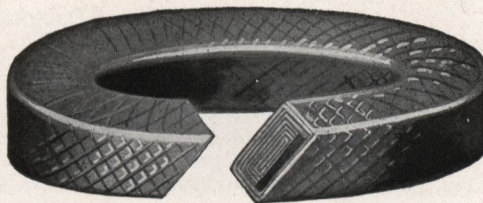


Fig. 3862. High Pressure Ring Packing
(No. 145)

No. 145, Ring Form, per pound 2.00
No. 146, Spiral Form, per pound 2.00
No. 147, Coil Form, per pound 2.00

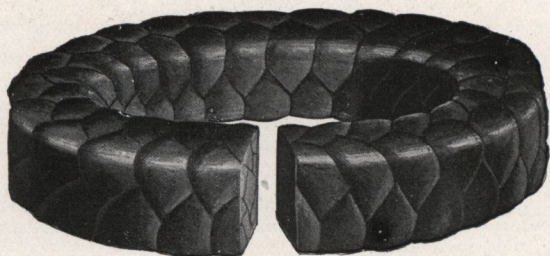


Fig. 3863. Hydraulic Ring (No. 164)

Donkey Brand Water-proof Hydraulic Ring Packing

For hydraulic work, plungers on cold water pumps, cold water pistons, accumulators, elevator cylinders, brine, cold oil, etc.

Made in sizes $\frac{1}{4}$ inch and larger.

No. 164, Ring Form, per pound 1.25
No. 165, Spiral Form, per pound 1.25
No. 166, Coil Form, per pound 1.25

High Pressure and Superheat Packings

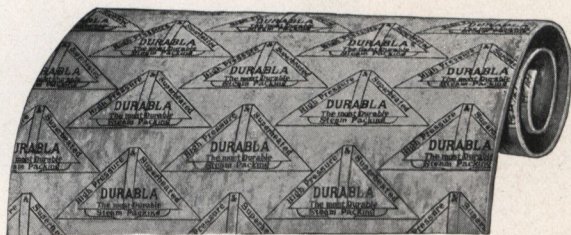


Fig. 3870. Durabla Sheet Packing

Durabla Sheet Packing

Will hold wet steam equally as well as superheated steam and high pressure; is not affected by 800 degrees Fahr., or 300 pounds steam pressure. Will not burn or blow out, requires no following up, forms to uneven flanges and is not affected by heavy vibration. Oil-proof, and gives perfect service on ammonia, gas or compressed air. Retains its life and flexibility under all climatic conditions.

Sheets 36 x 144 inches, 48 x 74 inches and 48 x 148 inches; $\frac{1}{16}$ inch thickness weighs a little over $\frac{1}{2}$ pound per square foot.

Price per pound..... 2.20

Durabla Flange Gaskets—Standard

Pipe Size.....	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$	3	3 $\frac{1}{2}$	4	4 $\frac{1}{2}$	5	6	7
Outside Diameter..	2 $\frac{1}{16}$	2 $\frac{3}{16}$	2 $\frac{1}{2}$	3	3 $\frac{1}{4}$	4	4 $\frac{1}{4}$	5	5 $\frac{3}{8}$	6	6 $\frac{3}{4}$	7 $\frac{1}{2}$
Each.....	.04	.05	.06	.09	.12	.14	.20	.22	.22	.24	.28	.36
Pipe Size.....	8	9	10	12	14	15	16	18	20	22	24	
Outside Diameter..	10 $\frac{3}{8}$	12 $\frac{3}{8}$	13 $\frac{1}{4}$	16	17 $\frac{5}{8}$	18 $\frac{1}{2}$	20 $\frac{1}{8}$	21 $\frac{1}{2}$	23 $\frac{3}{4}$	25 $\frac{1}{2}$	28 $\frac{1}{8}$	
Each.....	.40	.53	.56	.83	.84	.96	1.10	1.12	1.21	1.37	1.59	

Durabla Flange Gaskets—Extra Heavy

Pipe Size.....	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$	3	3 $\frac{1}{2}$	4	4 $\frac{1}{2}$	5	6	7
Outside Diameter..	2 $\frac{5}{8}$	3 $\frac{1}{8}$	3 $\frac{3}{4}$	4 $\frac{1}{4}$	5	5 $\frac{3}{4}$	6 $\frac{3}{8}$	7	7 $\frac{7}{8}$	8 $\frac{3}{8}$	9 $\frac{1}{4}$	10 $\frac{7}{8}$
Each.....	.04	.06	.09	.10	.14	.18	.20	.24	.28	.33	.44	.51
Pipe Size.....			8	9	10	12	14	15	16	18	20	22
Outside Diameter..			12	12 $\frac{3}{8}$	14 $\frac{1}{8}$	16 $\frac{1}{2}$	19	20 $\frac{1}{8}$	21 $\frac{1}{2}$	23 $\frac{3}{4}$	25 $\frac{1}{2}$	27 $\frac{5}{8}$
Each.....			.59	.63	.73	.95	1.37	1.49	1.58	1.84	2.06	2.30

Note: These Gaskets are cut to fit inside of Bolt Holes.

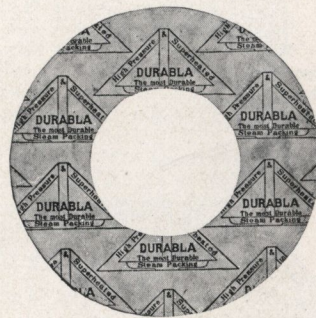


Fig. 3871. Durabla Gasket



Fig. 3872. Kaloric Sheet

Kaloric High Pressure Sheet Packing

Famous for its heat-resisting qualities, and is particularly designed for use on superheated steam where the packing comes in contact with extremely high temperature. Gives perfect satisfaction on gas and gasoline engines, air, oil, acid, ammonia, etc. It will not burn, blow or freeze out. Joints can be broken and the gaskets used repeatedly.

Made in sheets $\frac{1}{32}$, $\frac{1}{16}$ and $\frac{1}{8}$ inch thick.

List price per pound..... 1.50

Lone Rock Superheat Sheet Packing

Especially adapted to high pressure and superheated steam joints. A combination of heat-resisting substances chemically treated for the above conditions.

Superheat or high pressure steam will not affect it and it will not blow out under any pressure or temperature.

Made in sheets about 4 feet square and in thickness $\frac{1}{32}$, $\frac{1}{16}$ and $\frac{1}{8}$ inch.

List price, per pound..... 1.00

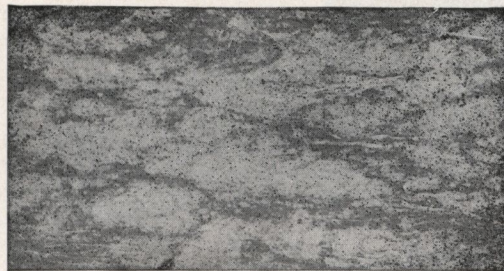


Fig. 3873. Lone Rock Superheat Sheet

Lone Rock High Pressure Gaskets

Size.....	3 x 4	3 $\frac{1}{2}$ x 4	3 x 5	3 $\frac{1}{2}$ x 5	4 x 5	4 x 6	5 x 6	5 x 7	6 x 8
Each.....	.15	.15	.18	.18	.20	.23	.23	.25	.50
Size.....		7 x 9	10 x 13	10 x 14	10 $\frac{1}{2}$ x 14 $\frac{1}{2}$	10 x 15	11 x 15	11 x 16	12 x 16
Each.....		.60	1.00	1.00	1.00	1.00	1.00	1.10	1.10

For intermediate sizes, figure the next largest size.

These gaskets are made from the finest asbestos, with a copper wire mesh for a base, and cured in rubber friction. They will stand any pressure, steam, water, gas, oil or ammonia, and can be used repeatedly.

Crown Ring Packings

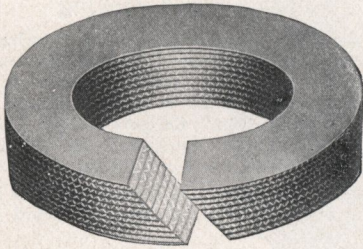


Fig. 3880
Crown Ring Packing (No. 190)

For all general purposes this packing will be found in every way satisfactory. It embodies every good point that long experience has proven necessary for the absolute success of a packing of this class.

Style No. 190, per pound..... 1.20

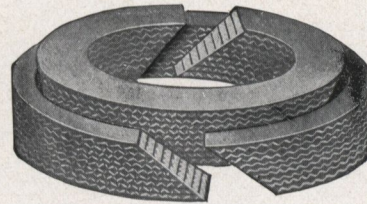


Fig. 3881
Crown Sectional Ring Packing (No. 191)

This packing will expand easily. It is designed for rods badly cut or out of center.

Can only be made when rim of packing is half inch or more in width.

No. 191, per pound..... 1.20

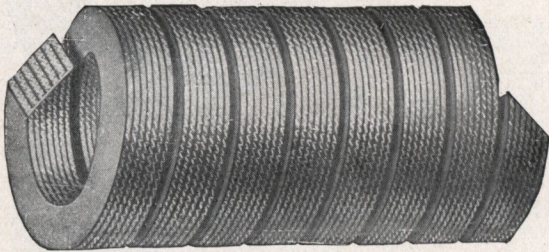


Fig. 3882. Crown Square Spiral Packing (No. 192)

Crown Square Spiral Ring Packing

This packing is made from the same material and for the same purpose as the style No. 190 Ring Packing.

Made in sizes $\frac{3}{16}$ inch and larger.

No. 192, per pound..... 1.20

Palmetto Self-Lubricating Packing

For all steam and air pressures. Especially adapted to high pressures. Made of a material that heat cannot affect. Has high tensile strength and each strand is so thoroughly saturated with graphite grease lubricant that it does not harden in service.

Put up in one pound tin spools in dust-proof box.



Fig. 3883. Twist Palmetto



Fig. 3884
Braided, Round and Square

Twist

Size, inch.....	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$
Feet, pound Spool.....	120	75	50	23	14	10	8
Per pound.....	2.00	2.00	2.00	2.00	2.00	2.00	2.00

Braided, Round and Square Palmetto, in 5-pound boxes. Price per pound, 2.00

Sizes, Braided, Round and Square: $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{9}{16}$, $\frac{5}{8}$, $\frac{11}{16}$, $\frac{3}{4}$, $\frac{13}{16}$, $\frac{7}{8}$, $\frac{15}{16}$, 1, $1\frac{1}{8}$, $1\frac{1}{4}$, $1\frac{3}{8}$, $1\frac{1}{2}$, $1\frac{5}{8}$, $1\frac{3}{4}$, $1\frac{7}{8}$ and 2.

Manhattan Braided, Round and Square Packing

In 5-pound boxes. Price per pound..... 2.00

For hydraulic pressures, hot and cold water services and low steam pressures. Does not swell and bind on the plungers or pistons and perfect lubrication of each strand before braiding does away with friction.

Sizes, Braided, Round and Square: $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{9}{16}$, $\frac{5}{8}$, $\frac{11}{16}$, $\frac{3}{4}$, $\frac{13}{16}$, $\frac{7}{8}$, $\frac{15}{16}$, 1, $1\frac{1}{8}$, $1\frac{1}{4}$, $1\frac{3}{8}$, $1\frac{1}{2}$, $1\frac{5}{8}$, $1\frac{3}{4}$, $1\frac{7}{8}$ and 2.



Fig. 3885

Packings

Tucks Round Piston Packing

Made from best quality duck and good quality friction.
Made in sizes $\frac{1}{4}$ inch and larger.

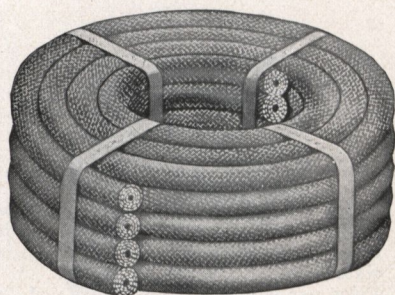


Fig. 3890
Tucks Round Piston Packing

No. 162, price per pound.....	1.20
No. 204, price per pound.....	1.00
No. 163, price per pound.....	.80

Tucks Square Piston Packing

Made in lengths 12 to 20 feet.

Made in sizes $\frac{1}{4}$ inch and larger

No. 205, price per pound.....	1.00
No. 157, price per pound.....	.85

"Standard"

A competitive brand

Price per pound.....	.75
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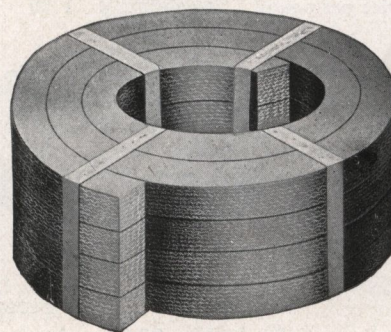


Fig. 3891
Tucks Square Piston Packing

Hydraulic Packing

No. 153, for heavy duty pumps and special service. Recommended for extremely hot and boiling water and high pressure hydraulic work.

Price per pound.....	1.60
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No. 152, adapted for elevator plungers, hydraulic presses, hammer rams and pump rods.

Price per pound.....	1.40
----------------------	------

No. 151, for general pump service. A thoroughly reliable packing.

Price per pound.....	1.20
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"Special"—A competitive packing.

Price per pound.....	1.00
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Made in sizes $\frac{1}{4}$ inch and larger.

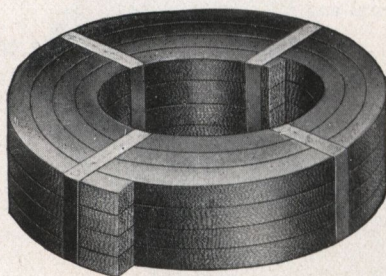


Fig. 3892
Hydraulic Packing

Square Flax Packing

No. 170. Highest grade, specially lubricated, free from grit or any foreign substance that would injure the rod.
Per pound..... .80

No. 171. High grade all flax packing, reliable, good wearing, and the most popular of this class of packings.
Per pound..... .70

No. 4280. Made of selected materials and best of lubricants. A satisfactory packing for ordinary service.
Per pound..... .60

No. 172. A competition packing that will do good service where conditions are not too exacting.
Per pound..... .50

Made in sizes $\frac{1}{4}$ inch and larger.



Fig. 3893
Square Flax Packing

Gum Core Packing

No. 173 Round.	No. 167 Oval, per pound.....	.60
No. 169 Round.	No. 168 Oval, per pound.....	.50
No. 5123 Round.	No. 5133 Oval, per pound.....	.50

Put up in boxes of 5 to 10 pounds each, or on reels 25 to 50 pounds. These packings are thoroughly lubricated and Nos. 173-167 are distinctly high grade and the equal of any gum core packing made.

Round core will be furnished unless oval core is ordered.
Made in sizes $\frac{1}{4}$ inch and larger.

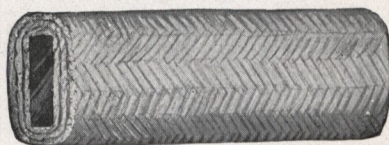


Fig. 3894
Gum Core Packing

Garlock Packings



Fig. 3900. Style No. 5

For low pressure steam rods. Made of good grade rubber and duck, thoroughly lubricated.

Price per pound..... 1.20



Fig. 3901. Style No. 10

Especially adapted for scored rods and used in combination with style No. 5. Only made when width of rim is $\frac{3}{8}$ inch and over.

Price per pound..... 1.20



Fig. 3902. Style No. 15

For low pressure steam, same as Style No. 5 Ring. Can be carried in stock. Made in sizes $\frac{1}{8}$ to 2 inch in sixteenths.

Price per pound..... 1.20

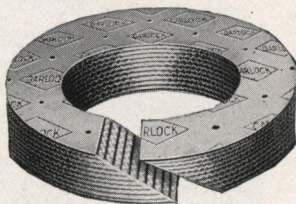


Fig. 3903

Style No. 333 for Steam
Style No. 334 for Ammonia

Also made sectional.

Made of a special grade of rubber and duck of best quality, thoroughly lubricated and stitched.

Gives excellent service on medium pressure steam, hot water and ammonia.

Price per pound..... 1.60

Spiral Style No. 777

Same stock as Ring Style No. 333 and used for same purpose.

Price per pound..... 1.60



Fig. 3905. Style No. 99

Waterproof Hydraulic Ring Packing

For all hydraulic work, cold water rods and plungers, elevators, accumulators, cold oil, brine, etc. Also furnished in spiral and coil form.

Price per pound..... 1.25

Style No. 900 High Pressure Sheet

Made of long fibre asbestos, built up under tremendous pressure. Made in sheets $40\frac{1}{4} \times 42\frac{1}{2}$ and larger. Adapted for high pressure steam joints, air, ammonia, acids, oils, etc. Furnished in $\frac{1}{32}$, $\frac{1}{16}$, $\frac{1}{8}$, $\frac{3}{16}$ and $\frac{1}{4}$ inch.

Price per pound..... 2.00

Red Rubber Sheet—Style No. 22

No red sheet packing has given such unvarying satisfaction. Furnished in $\frac{1}{32}$, $\frac{1}{16}$, $\frac{1}{8}$, $\frac{3}{16}$ and $\frac{1}{4}$ inch

Price per pound..... .80



Fig. 3904. Style No. 200

High Pressure Ring Packing

Made of highest grade asbestos, lubricated throughout and is suitable for high pressure steam, expansion joints, acids, etc.

Also made in spiral and coil form.

Price per pound..... 2.00



Fig. 3906. Style No. 260

Special Hydraulic Packing

For inside packed pumps, pumping hot or cold water. Sizes must be exact, as rings are solid. Also made rock hard when so ordered. Also carried in stock in coil form.

Price per pound..... 2.00

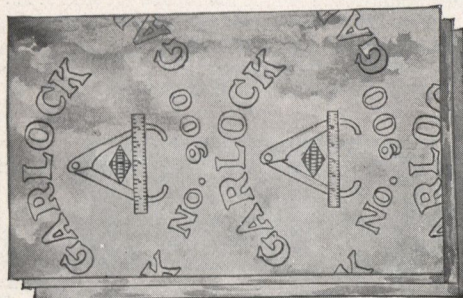


Fig. 3907. Style No. 900

Daniel's P P P Packings

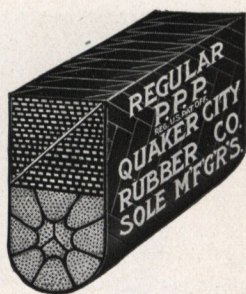


Fig. 3910. Regular P P P

For steam pressures of 100 pounds or less; ordinary water pressures, cold or warm; low ammonia pressures, valve stems, etc.

No. 182, per pound..... 1.00

Nos. 182 and 183 made from $\frac{3}{16}$ to $1\frac{1}{4}$ inch, advancing in $\frac{1}{16}$ inch, and from $1\frac{1}{4}$ to 3 inches, advancing in $\frac{1}{8}$ inch.

Made in any length. Boxes of the smaller sizes contain from 20 feet upward and weigh 5 pounds or more. Larger sizes run about 12 feet to the box weighing 7 to 10 pounds. It is twice as wide as it is thick.



Fig. 3911. Special P P P

For steam pressures over 100 pounds (when not superheated); high ammonia pressures; high hydraulics, very hot water; air pumps, valve stems, etc.

No. 183, per pound..... 1.25

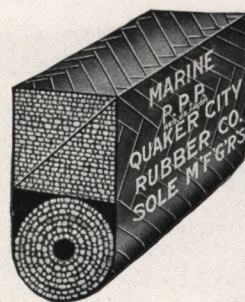


Fig. 3912. Marine P P P

For all pressures when superheated or dry steam is used. Must not be used for saturated nor wet steam, the water end of pumps, nor low pressure engines.

No. 678, per pound..... 1.25

Made in all sizes from $\frac{3}{8}$ inch up.

P P P Rings Packings



Fig. 3913 Regular Style

No. 184 Regular Style made to order in sets ready to place in stuffing box. Furnished in all sizes from $\frac{3}{16}$ inch up.

No. 184, per pound..... 1.50



Fig. 3914. Special

No. 185 Special Style made to order in sets ready to place in stuffing box, in all sizes from $\frac{3}{16}$ inch up.

No. 185, per pound..... 1.75



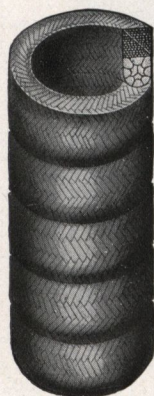
Fig. 3915. Marine

No. 698 Special Style made to order in sets ready to place in stuffing box, in all sizes from $\frac{3}{8}$ inch up.

No. 698, per pound..... 1.75

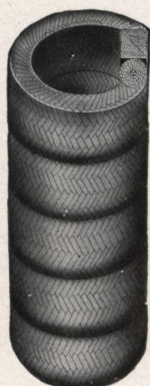
Suited for same pressure conditions as Figs. 3910, 3911, 3912. Also applies to all styles of Spiral Packings.

P P P Spiral Packings



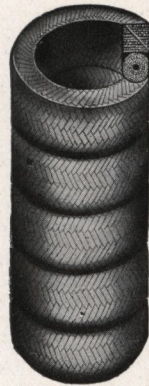
Regular Style
No. 186
Made in all sizes from $\frac{3}{16}$ inch up
Per pound..... 1.25

Fig. 3916
Regular Style
No. 186



Special Style
No. 187
Made in all sizes from $\frac{3}{16}$ inch up
Per pound..... 1.50

Fig. 3917
Special Style
No. 187



Marine Style
No. 688
Made in all sizes from $\frac{3}{8}$ inch up
Per pound..... 1.50

Fig. 3918
Marine Style
No. 688

Sectional Gasket Packings

Eclipse Sectional Rainbow Gasket

Made from Rainbow Packing Compound. Can be readily fitted to any size man or handhole plate in use, and a perfectly tight joint guaranteed in all cases.

Directions, extra metal tubes, and a roll of gummed tape for wrapping joint spirally, accompany each box.

Diameter, inch	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1
Feet, per box	48	36	36	24	18	12	12
Pounds, per box	$1\frac{1}{2}$	$2\frac{3}{4}$	5	$5\frac{3}{16}$	6	$6\frac{1}{4}$	7

$\frac{1}{4}$ and $\frac{3}{8}$ inch for pipe unions.

$\frac{1}{2}$ inch for handhole plates.

$\frac{5}{8}$ and $\frac{3}{4}$ inch for manhole plates.

$\frac{7}{8}$ and 1 inch for extra large manhole plates.

Price per pound 1.00



Fig. 3920. Eclipse Gasket

Jenkins Bros. Gasket Tubing

Made from a compound similar to that used in 96 Packing, and is well adapted for the packing of steam joints, especially handholes, manholes, etc. Can be made to conform with any desired shape.

Made $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ and $\frac{3}{4}$ inch in diameter in lengths of about 12 feet. Packed in boxes containing from 5 to 7 pounds of tubing, with a supply of plugs and tape.

Price per pound 1.25

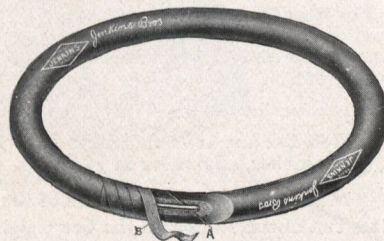


Fig. 3921
Jenkins Bros. Gasket Tubing

Ebonite Tubular Gaskets

Carefully made from the celebrated Ebonite Compound.

Not affected by intense heat. Will not blow out under high pressure. Always ready and easily applied to manholes or handholes of any size or shape. Economical, as they can be used many times.

Made in sizes $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$ inch.

$\frac{1}{4}$ -inch, per pound 1.15

$\frac{3}{8}$ -inch and larger, per pound 1.00

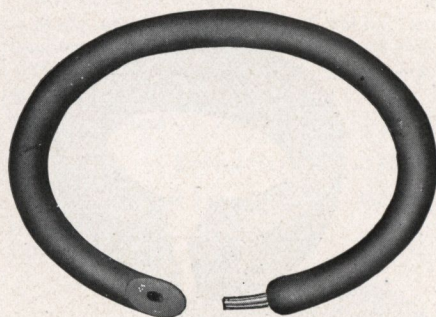


Fig. 3922. Ebonite Tubular Gasket

Red Tubular Gaskets

For manhole and handhole plates. Will make any size gasket instantly. Very convenient and always ready.

Stock sizes: $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ and $\frac{3}{4}$ inch.

Price, per pound80

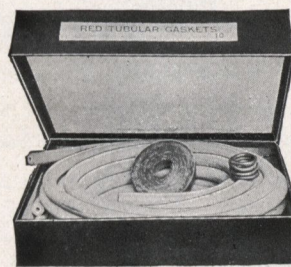


Fig. 3923
Red Tubular Gasket Packing

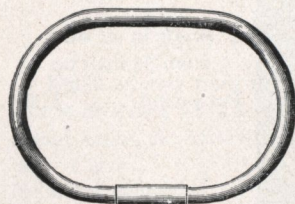


Fig. 3924

Lightning Non-Tubular
Gasket, showing both
ends in sleeve ready
for use

Lightning Non-Tubular Gasket Packing

Solid cord and sleeve of same material. No metal at splice. No unequal strain or plates. No tape wrapping. No waste. Splice made instantly. Any size or shape gasket or ring can be made quickly and used many times when properly applied. Equally good for steam, water, air, acid, ammonia and other joints.

$\frac{1}{4}$ inch for unions and faced flanges. $\frac{3}{8}$ inch for man or handholes. $\frac{1}{2}$ inch for defective or grooved plates. Packed in 10-pound boxes containing about 450 feet $\frac{3}{16}$; 250 feet $\frac{1}{4}$; 110 feet $\frac{3}{8}$; 65 feet $\frac{1}{2}$ inch.

$\frac{3}{16}$, $\frac{1}{4}$ and $\frac{3}{8}$ inch in 5-pound boxes if desired.

Price per pound 1.00



2	x 3	3	x 6	5	x 6	9	x 14	10	x 14½	11	x 15½
2	x 3½	3½	x 4	5	x 7	9	x 14½	10	x 15	11	x 16
2	x 4	3½	x 4½	5½	x 8	9	x 15	10	x 15½	11½	x 14
2¼	x 3½	3½	x 5	6	x 8	9	x 15½	10	x 16	11½	x 14½
2¼	x 4	3½	x 5½	7½	x 11½	9	x 16	10½	x 12	11½	x 15
2½	x 3	3½	x 6	8	x 10	9½	x 12	10½	x 12½	11½	x 15½
2½	x 3½	3¾	x 5½	8	x 11	9½	x 12½	10½	x 13	11½	x 16½
2½	x 4	4	x 5	8	x 12	9½	x 13	10½	x 13½	12	x 14
2½	x 4½	4	x 5½	8	x 14	9½	x 13½	10½	x 14	12	x 14½
2½	x 5½	4	x 6	8	x 14½	9½	x 14	10½	x 14½	12	x 15
2¾	x 3¾	4	x 6½	8½	x 14	9½	x 14½	10½	x 15	12	x 16
2¾	x 4	4	x 7	9	x 11	9½	x 15	10½	x 15½	12	x 17
2¾	x 3¾	4½	x 5	9	x 11½	9½	x 15½	10½	x 16½	12	x 18
3	x 4	4½	x 5½	9	x 12	10	x 12	11	x 13	12¼	x 16
3	x 4½	4½	x 6	9	x 12½	10	x 13	11	x 14	12½	x 15
3	x 5	4½	x 6½	9	x 13	10	x 13½	11	x 14½	12½	x 15½
3	x 5½	4½	x 7	9	x 13½	10	x 14	11	x 15		

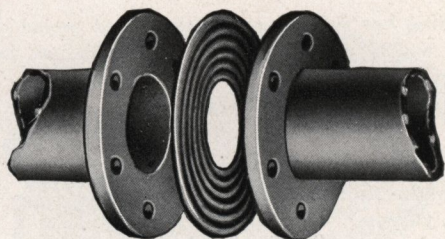


Fig. 3940. Corrugated Flange Gasket

Gaskets

Corrugated Copper Gaskets

Corrugated Brass Gaskets

Corrugated Steel Gaskets

Corrugated Monel Metal Gaskets

Monel is a superior form of gasket for the reason that they do not blow out under the most severe conditions; heat does not affect them (melting point 2480°F), and they are non-corrosive.

Largely used for several years by many of the largest power stations, manufacturers, etc., in the country.

Standard Price List

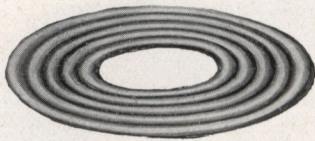
Corrugated Copper, Brass, Steel and Monel Metal Gaskets

Note: Prices given are for solid gaskets. The difference between outside and inside diameters will be the price of required gasket

Inches	Each	Inches	Each	Inches	Each	Inches	Each
1/2	.004	6	.57	18	5.09	30	14.14
9/16	.005	6 1/4	.61	18 1/4	5.23	30 1/4	14.37
5/8	.006	6 1/2	.66	18 1/2	5.38	30 1/2	14.61
11/16	.007	6 3/4	.72	18 3/4	5.52	30 3/4	14.85
3/4	.009	7	.77	19	5.67	31	15.10
13/16	.01	7 1/4	.83	19 1/4	5.82	31 1/4	15.34
7/8	.012	7 1/2	.88	19 1/2	5.97	31 1/2	15.59
15/16	.014	7 3/4	.94	19 3/4	6.13	31 3/4	15.83
1	.016	8	1.01	20	6.28	32	16.08
1 1/8	.02	8 1/4	1.07	20 1/4	6.44	32 1/4	16.34
1 1/4	.025	8 1/2	1.13	20 1/2	6.60	32 1/2	16.59
1 3/8	.03	8 3/4	1.20	20 3/4	6.76	32 3/4	16.85
1 1/2	.035	9	1.27	21	6.93	33	17.11
1 5/8	.04	9 1/4	1.34	21 1/4	7.09	33 1/4	17.37
1 3/4	.05	9 1/2	1.42	21 1/2	7.26	33 1/2	17.63
1 7/8	.055	9 3/4	1.49	21 3/4	7.43	33 3/4	17.89
2	.06	10	1.57	22	7.60	34	18.16
2 1/8	.07	10 1/4	1.65	22 1/4	7.78	34 1/4	18.43
2 1/4	.08	10 1/2	1.73	22 1/2	7.95	34 1/2	18.70
2 3/8	.09	10 3/4	1.82	22 3/4	8.13	34 3/4	18.97
2 1/2	.10	11	1.90	23	8.31	35	19.24
2 5/8	.11	11 1/4	1.99	23 1/4	8.49	35 1/4	19.52
2 3/4	.12	11 1/2	2.08	23 1/2	8.67	35 1/2	19.80
2 7/8	.13	11 3/4	2.17	23 3/4	8.86	35 3/4	20.08
3	.14	12	2.26	24	9.05	36	20.36
3 1/8	.15	12 1/4	2.36	24 1/4	9.24	36 1/4	20.64
3 1/4	.17	12 1/2	2.45	24 1/2	9.43	36 1/2	20.93
3 3/8	.18	12 3/4	2.55	24 3/4	9.62	36 3/4	21.21
3 1/2	.19	13	2.65	25	9.82	37	21.50
3 5/8	.21	13 1/4	2.76	25 1/4	10.01	37 1/4	21.80
3 3/4	.22	13 1/2	2.86	25 1/2	10.21	37 1/2	22.09
3 7/8	.24	13 3/4	2.97	25 3/4	10.42	37 3/4	22.38
4	.25	14	3.08	26	10.62	38	22.68
4 1/8	.27	14 1/4	3.19	26 1/4	10.82	38 1/4	22.98
4 1/4	.28	14 1/2	3.30	26 1/2	11.03	38 1/2	23.28
4 3/8	.30	14 3/4	3.42	26 3/4	11.24	38 3/4	23.59
4 1/2	.32	15	3.53	27	11.45	39	23.89
4 5/8	.34	15 1/4	3.65	27 1/4	11.66	39 1/4	24.20
4 3/4	.35	15 1/2	3.77	27 1/2	11.88	39 1/2	24.51
4 7/8	.37	15 3/4	3.90	27 3/4	12.10	39 3/4	24.82
5	.39	16	4.02	28	12.32	40	25.13
5 1/8	.41	16 1/4	4.15	28 1/4	12.54	40 1/4	25.45
5 1/4	.43	16 1/2	4.28	28 1/2	12.76	40 1/2	25.77
5 3/8	.45	16 3/4	4.41	28 3/4	12.98	40 3/4	26.08
5 1/2	.48	17	4.54	29	13.21	41	26.41
5 5/8	.50	17 1/4	4.67	29 1/4	13.44	41 1/4	26.73
5 3/4	.52	17 1/2	4.81	29 1/2	13.67	41 1/2	27.05
5 7/8	.54	17 3/4	4.95	29 3/4	13.90	41 3/4	27.38

Always give inside and outside diameters of circular gaskets and send blue print or template of special shapes.

Flange Gaskets

Full Face Corrugated Copper
GasketsFig. 3951
Corrugated Copper GasketFig. 3952
Corrugated Copper Asbestos-lined GasketList prices are for Gaskets not
punched for bolt holes

Standard

Pipe Size	Outside Diameter	Number of Bolts	Size of Bolts	Bolt Circle	List Price Each
1	4	4	$\frac{1}{8}$	3	.234
1 $\frac{1}{4}$	4 $\frac{1}{2}$	4	$\frac{1}{8}$	3 $\frac{3}{8}$	.295
1 $\frac{1}{2}$	5	4	$\frac{1}{2}$	3 $\frac{7}{8}$	.355
2	6	4	$\frac{5}{8}$	4 $\frac{3}{4}$	.51
2 $\frac{1}{2}$	7	4	$\frac{5}{8}$	5 $\frac{1}{2}$	.67
3	7 $\frac{1}{2}$	4	$\frac{5}{8}$	6	.74
3 $\frac{1}{2}$	8 $\frac{1}{2}$	4	$\frac{5}{8}$	7	.94
4	9	8	$\frac{5}{8}$	7 $\frac{1}{2}$	1.02
4 $\frac{1}{2}$	9 $\frac{1}{4}$	8	$\frac{3}{4}$	7 $\frac{3}{4}$	1.02
5	10	8	$\frac{3}{4}$	8 $\frac{1}{2}$	1.18
6	11	8	$\frac{3}{4}$	9 $\frac{1}{2}$	1.33
7	12 $\frac{1}{2}$	8	$\frac{3}{4}$	10 $\frac{3}{4}$	1.68
8	13 $\frac{1}{2}$	8	$\frac{3}{4}$	11 $\frac{3}{4}$	1.85
9	15	12	$\frac{3}{4}$	13 $\frac{1}{4}$	2.26
10	16	12	$\frac{3}{4}$	14 $\frac{1}{4}$	2.45
12	19	12	$\frac{7}{8}$	17	3.41
14	21	12	1	18 $\frac{3}{4}$	3.85
15	22 $\frac{1}{4}$	16	1	20	4.25
16	23 $\frac{1}{2}$	16	1	21 $\frac{1}{4}$	4.65

Extra Heavy

Pipe Size	Outside Diameter	Number of Bolts	Size of Bolts	Bolt Circle	List Price Each
1	4 $\frac{1}{2}$	4	$\frac{1}{2}$	3 $\frac{1}{4}$	.304
1 $\frac{1}{4}$	5	4	$\frac{1}{2}$	3 $\frac{3}{4}$	.365
1 $\frac{1}{2}$	6	4	$\frac{5}{8}$	4 $\frac{1}{2}$	.535
2	6 $\frac{1}{2}$	4	$\frac{5}{8}$	5	.60
2 $\frac{1}{2}$	7 $\frac{1}{2}$	4	$\frac{5}{8}$	5 $\frac{7}{8}$	.78
3	8 $\frac{1}{4}$	8	$\frac{5}{8}$	6 $\frac{5}{8}$	.93
3 $\frac{1}{2}$	9	8	$\frac{5}{8}$	7 $\frac{1}{4}$	1.08
4	10	8	$\frac{5}{8}$	7 $\frac{7}{8}$	1.32
4 $\frac{1}{2}$	10 $\frac{1}{2}$	8	$\frac{3}{4}$	8 $\frac{1}{2}$	1.41
5	11	8	$\frac{3}{4}$	9 $\frac{1}{4}$	1.51
6	12 $\frac{1}{2}$	12	$\frac{3}{4}$	10 $\frac{5}{8}$	1.88
7	14	12	$\frac{7}{8}$	11 $\frac{7}{8}$	2.31
8	15	12	$\frac{7}{8}$	13	2.52
9	16 $\frac{1}{4}$	12	1	14	2.88
10	17 $\frac{1}{2}$	16	1	15 $\frac{1}{4}$	3.24
12	20 $\frac{1}{2}$	16	$\frac{1}{2}$	17 $\frac{3}{4}$	4.34
14	23	20	$\frac{1}{2}$	20 $\frac{1}{4}$	5.23
15	24 $\frac{1}{2}$	20	$\frac{1}{2}$	21 $\frac{1}{2}$	5.90
16	25 $\frac{1}{2}$	20	$\frac{1}{2}$	22 $\frac{1}{2}$	6.19

Corrugated Copper Asbestos-lined Gaskets

Standard

Pipe Size	Size Gasket	Each
$\frac{1}{2}$	$\frac{5}{8}$ x $1\frac{1}{4}$	.08
$\frac{3}{4}$	$\frac{7}{8}$ x $1\frac{3}{4}$	.12
1	$\frac{7}{8}$ x $2\frac{1}{4}$	.16
1 $\frac{1}{4}$	$1\frac{1}{4}$ x $2\frac{1}{2}$	.20
1 $\frac{1}{2}$	$1\frac{1}{2}$ x $2\frac{3}{4}$	.24
2	$1\frac{3}{4}$ x 3	.32
2 $\frac{1}{2}$	$2\frac{1}{4}$ x 4	.40
3	$2\frac{3}{4}$ x $4\frac{3}{4}$	.48
3 $\frac{1}{2}$	$3\frac{1}{4}$ x $5\frac{1}{4}$	.56
4	$3\frac{3}{4}$ x $6\frac{1}{4}$	.64
4 $\frac{1}{2}$	$4\frac{1}{4}$ x $6\frac{3}{8}$	.72
5	$4\frac{3}{4}$ x $6\frac{7}{8}$	.80
5 $\frac{1}{2}$	$5\frac{1}{4}$ x $7\frac{5}{8}$	.88
6	$5\frac{3}{4}$ x 8	.96
6 $\frac{1}{2}$	$6\frac{1}{4}$ x $8\frac{5}{8}$	1.04
7	$6\frac{3}{4}$ x $9\frac{1}{2}$	1.12
7 $\frac{1}{2}$	$7\frac{1}{4}$ x $9\frac{7}{8}$	1.20
8	$7\frac{3}{4}$ x $10\frac{1}{2}$	1.28
9	$8\frac{1}{4}$ x $10\frac{7}{8}$	1.44
10	$8\frac{3}{4}$ x $11\frac{1}{2}$	1.60
12	$9\frac{1}{4}$ x $12\frac{3}{8}$	1.92
14	$10\frac{1}{4}$ x $13\frac{1}{4}$	2.24
15	$12\frac{1}{4}$ x 16	2.40
16	$14\frac{1}{2}$ x $17\frac{5}{8}$	2.56

Extra Heavy

Pipe Size	Size Gasket	Each
$\frac{1}{2}$	$\frac{5}{8}$ x $2\frac{3}{8}$	.09
$\frac{3}{4}$	$\frac{7}{8}$ x $2\frac{5}{8}$	.14
1	$1\frac{1}{4}$ x $2\frac{7}{8}$	.18
1 $\frac{1}{4}$	$1\frac{1}{2}$ x $3\frac{1}{8}$	.26
1 $\frac{1}{2}$	$1\frac{3}{4}$ x $3\frac{1}{2}$	.27
2	$2\frac{1}{4}$ x $4\frac{1}{4}$	.36
2 $\frac{1}{2}$	$2\frac{3}{4}$ x 5	.45
3	$3\frac{1}{4}$ x $5\frac{7}{8}$	.54
3 $\frac{1}{2}$	$3\frac{3}{4}$ x $6\frac{1}{2}$	.63
4	$4\frac{1}{4}$ x 7	.72
4 $\frac{1}{2}$	$4\frac{3}{4}$ x $7\frac{5}{8}$	.81
5	$5\frac{1}{4}$ x $8\frac{3}{8}$	.90
6	$6\frac{1}{4}$ x $9\frac{1}{4}$	1.08
7	$7\frac{1}{4}$ x $10\frac{1}{8}$	1.26
8	$8\frac{1}{4}$ x 12	1.44
9	$9\frac{1}{4}$ x 13	1.62
10	$10\frac{1}{4}$ x $14\frac{1}{4}$	1.80
12	$12\frac{1}{4}$ x $16\frac{3}{4}$	2.16
14	$14\frac{1}{2}$ x 19	2.52
15	$15\frac{1}{2}$ x $19\frac{7}{8}$	2.70
16	$16\frac{1}{2}$ x $21\frac{3}{8}$	2.88

Price List

For any style of compressed asbestos sheet gaskets, high grade rubber and gaskets cut from well known packings, such as Common Sense[®] Klingerit, Durabla, Consolco, Danubil, Tauril, Permanite, Goetzerit, Phoenix, Kernite, Asbestolith, Dichtungsgummi, N. B. O., Ebonite, Rainbow[®] Moboline, etc. Discount governs price.

For Standard and Low Pressure Flanged
Fittings and Flanged Valves

Pipe Size	Size of Gasket	Each
1	1 x $2\frac{1}{8}$	.06
1 $\frac{1}{4}$	$1\frac{1}{4}$ x $2\frac{1}{2}$	.08
1 $\frac{1}{2}$	$1\frac{1}{2}$ x $3\frac{3}{8}$	.10
2	2 x $4\frac{1}{8}$	.12
2 $\frac{1}{2}$	$2\frac{1}{2}$ x $4\frac{7}{8}$	.15
3	3 x $5\frac{3}{8}$	.19
3 $\frac{1}{2}$	$3\frac{1}{2}$ x $6\frac{3}{8}$	.25
4	4 x $6\frac{3}{4}$	.30
4 $\frac{1}{2}$	$4\frac{1}{2}$ x 7	.32
5	5 x $7\frac{3}{4}$	.35
6	6 x $8\frac{3}{4}$	.41
7	7 x 10	.50
8	8 x 11	.55
9	9 x $12\frac{1}{2}$	.65
10	10 x $13\frac{3}{2}$	.80
12	12 x $16\frac{1}{8}$	1.00
14	14 x $17\frac{3}{4}$	1.25
15	15 x 19	1.50
16	16 x $20\frac{1}{4}$	1.75

For Extra Heavy Flanged Fittings and Extra
Heavy and Medium Flanged Valves

Pipe Size	Size of Gasket	Each
1	1 x $2\frac{3}{4}$	.08
1 $\frac{1}{4}$	$1\frac{1}{4}$ x $3\frac{1}{4}$	.10
1 $\frac{1}{2}$	$1\frac{1}{2}$ x $3\frac{3}{8}$	.12
2	2 x $4\frac{3}{8}$	.15
2 $\frac{1}{2}$	$2\frac{1}{2}$ x $5\frac{1}{8}$	.19
3	3 x 6	.24
3 $\frac{1}{2}$	$3\frac{1}{2}$ x $6\frac{3}{8}$	.27
4	4 x $7\frac{1}{8}$	.33
4 $\frac{1}{2}$	$4\frac{1}{2}$ x $7\frac{3}{4}$	.35
5	5 x $8\frac{1}{2}$	.45
6	6 x $9\frac{1}{8}$	.55
7	7 x 11	.70
8	8 x $12\frac{1}{8}$	.75
9	9 x $13\frac{1}{8}$	.85
10	10 x $14\frac{3}{8}$	1.00
12	12 x $16\frac{1}{2}$	1.25
14	$13\frac{1}{4}$ x $19\frac{1}{8}$	1.65
15	$14\frac{1}{4}$ x 20	1.80
16	$15\frac{1}{4}$ x $21\frac{1}{2}$	2.10

High Pressure Steam Pipe Covering

85% Magnesia

An efficient insulation for high pressure and superheated steam. Combines the high non-conducting qualities of carbonate of magnesia and asbestos. Light in weight.

Furnished in 3-foot sections from 1 to 3 inches thick, to fit standard pipes $\frac{1}{2}$ to 14 inches in diameter. For larger pipes, curved segments or blocks are supplied. Also furnished in sheets and blocks for covering boilers, boiler flues, etc. List prices for 85% Magnesia Covering, page 397.

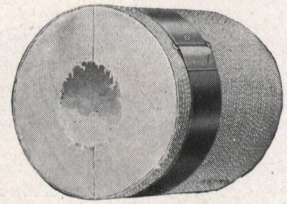


Fig. 3960
85% Magnesia Covering

Asbestos Fire Felt Sectional Pipe Covering

For high pressure and superheated steam pipes.

Composed of pure Asbestos Fiber loosely felted together like hair felt, containing a large number of small air cells. Fireproof and is unaffected by vibration, expansion and contraction, or conditions common to hard shop or factory service.

Furnished in sectional form in thicknesses 1 inch to 3 inches, to fit all standard sizes of pipe.

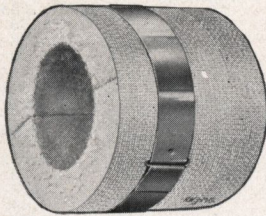


Fig. 3961. Fire Felt Covering

List prices for Fire Felt Covering, page 397.

Asbestocel Medium Pressure Steam Pipe Covering

Asbestocel is for medium and low pressure steam heating pipes. Composed of successive layers of plain and corrugated heavy felt, made from long asbestos fiber, with corrugations running around the pipe and forming short, closed loops, which is the best possible application of the "dead air" principle of insulation. Built on the principle of the arch, it is strong and durable and not injured by vibration or rough usage.

Furnished in sections 3 feet long, $\frac{1}{2}$, $\frac{3}{4}$ and 1 inch thick, neatly finished with canvas and bands.

List prices, page 397.

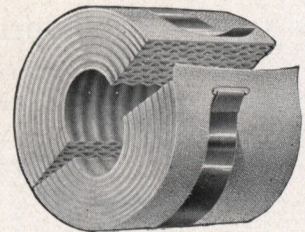


Fig. 3962. Asbestocel

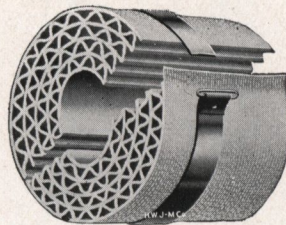


Fig. 3963. Air Cell Covering

Air Cell Sectional Pipe Covering

For low pressure and heating pipes. A light cellular covering of corrugated asbestos paper with channels running lengthwise of the pipe. Made from heavy asbestos felt stiffened in process of manufacture, giving strong and durable sections.

Supplied in sections 3 feet long, $\frac{1}{2}$, $\frac{3}{4}$ and 1 inch thick, neatly finished with canvas and bands.

List prices for Air Cell Covering and Moulded Fittings, page 397.

Safety Blow-off Sectional Covering

A reliable protection for boiler blow-off pipes against corrosion by hot gases and prevents explosions resulting from sudden changes of temperature when operating the boiler.

1-inch Sections and Elbows, each	1.40	2½-inch Sections and Elbows, each . . .	2.50
1¼-inch Sections and Elbows, each . . .	1.50	3-inch Sections and Elbows, each	3.00
1½-inch Sections and Elbows, each . . .	1.75	4-inch Sections and Elbows, each	4.00
2-inch Sections and Elbows, each	2.00		



Fig. 3965
Blow-off Covering

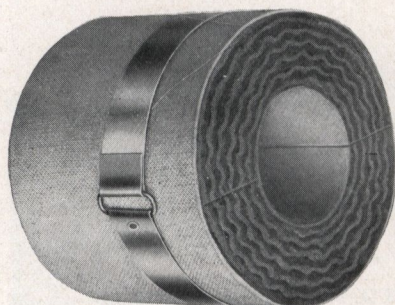


Fig. 3970. Wool Felt Covering

Pipe Coverings

Wool Felt Sectional Pipe Coverings

These coverings are made of Wool Felt and lined with Asbestos Paper. Recommended as an efficient and inexpensive covering for steam and hot water heating systems.

STANDARD—Corrugated laminations of Wool Felt 1 inch thick with an interlining of two layers of Asbestos Paper.

CHAMPION—Corrugated laminations of Wool Felt $\frac{3}{4}$ inch thick, with one layer of Asbestos Paper.

AQUA—Corrugated laminations of Wool Felt $\frac{1}{2}$ inch thick, with one layer of Asbestos Paper.

Zero Covering—To Protect Pipes from Freezing

Zero Sectional Pipe Covering is a combination of hair and wool insulating felts specially designed for the protection of cold water pipes from freezing.

Where protection is required against low temperatures we recommend two layers of Zero Covering, applied so as to break joints, and the surface painted with asphaltum, pitch, tar, etc.

Furnished approximately $1\frac{1}{4}$ inch thick only, for all standard sizes of pipe.

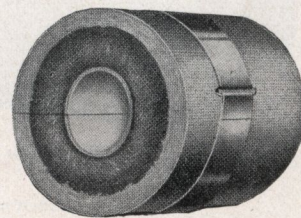


Fig. 3971. Zero

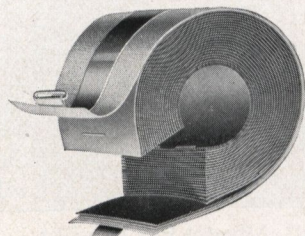


Fig. 3972. Anti-Sweat

Anti-Sweat Sectional Pipe Covering

To Prevent Condensation in Cold Water Pipes

When the pipes pass through atmospheres of higher temperature than the water in the pipes, a condensation takes place on the surface of the pipe which results in dripping.

Our Anti-Sweat Covering overcomes this by insulating the cold pipe from the warm atmosphere.

It is made in 3-foot sections from layers of our waterproof insulating felt and wool felt, about $\frac{1}{2}$, $\frac{3}{4}$ and 1 inch thick, finished with canvas and metal bands for fastening.

Standard Brine and Ammonia Pipe Covering

Made of alternate layers of Roofing Felt or Parchment Paper and Wool Felt Paper firmly stitched together.

Particularly efficient as an insulation for brine and ammonia pipes. Where the temperature of the refrigerant is very low a double layer of this covering is recommended, care being taken that all joints are broken and the covering sealed with suitable paint.

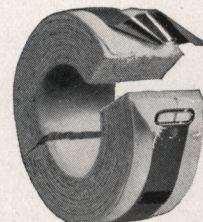


Fig. 3973. Brine

List Prices for Pipe Coverings

Fig. 3960 to 3973 Inclusive

Size Pipe	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	6	7	8	9	10	12
Price, per foot	.22	.24	.27	.30	.33	.36	.40	.45	.50	.60	.65	.70	.80	1.00	1.10	1.20	1.30	1.85
Price, Elbow	.30	.30	.30	.30	.30	.36	.42	.48	.54	.60	.72	.90	1.30	1.80	2.40	3.00	3.60	...
Price, Tee	.36	.36	.36	.36	.36	.42	.48	.54	.60	.75	.90	1.20	1.60	2.20	3.00	3.80	4.60	...
Price, Cross	.48	.48	.48	.48	.48	.54	.60	.70	.80	.95	1.10	1.50	2.00	2.80	3.60	4.40	5.20	...
Price, Flange Cover	.50	.50	.50	.50	.50	.60	.70	.80	.90	1.00	1.30	1.60	1.90	2.20	2.50	2.90	3.30	...

Discount governs kind and thickness of covering.

Price for Covering larger than 12 and up to 30 inch quoted on application.

For Fittings larger than 10 inch use Magnesia or Asbestos Cement.

Nonpareil Cork Covering

For Brine, Ammonia, Ice Water, Beer and Cold Water Lines. Made in Four Grades

Standard Brine Covering from 2 to 3 inches thick, for range 0° Fahr. to 25° Fahr., for brine and ammonia gas lines.

Special Thick Brine Covering, from 3 to 4 inches in thickness, for brine lines where the temperature runs below 0° Fahr.

Ice Water Covering, approximately $1\frac{1}{2}$ inches thick, intended for use on refrigerated drinking water, liquid ammonia and beer lines, and generally where temperatures of 25° to 45° Fahr. are carried.

Cold Water Covering for pipes up to and including 4 inches, approximately one inch thick, is for use on cold water piping to prevent sweating. For sizes larger than 4 inches, use Ice Water Covering.

Made for screwed and flanged pipe, valves and fittings to 16 inch.

Market prices, or quoted on specifications.

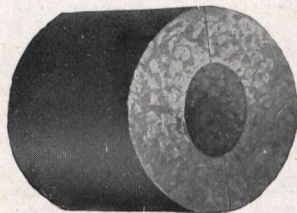


Fig. 3974

Nonpareil Cork Covering

85 Per Cent Magnesia Blocks

This covering is recommended for boilers, domes, kettles, flues, stacks, pump and engine cylinders, etc. It is composed of the same ingredients as the Magnesia Sectional Covering, and is furnished in slabs or blocks 3 x 18 inches, and 6 x 36 inches, of any required thickness.

Thickness, inches.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$
Per Square Foot.....	.27	.27	.30	.38	.45	.60	.75	.90	1.05

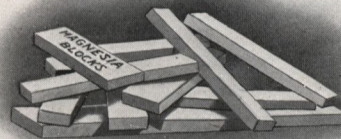


Fig. 3980. Magnesia Blocks

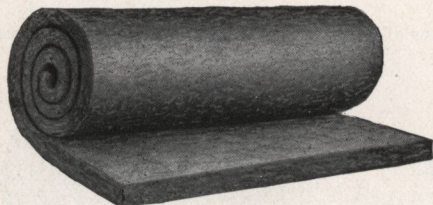


Fig. 3981. Hair Felt

Hair Felt

Rolls are 6 feet wide and 50 feet long; or 3 feet wide and 100 feet long.

Thickness, inches.....	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{2}$	2
Per Square Foot.....	.08	.09 $\frac{1}{2}$	.11 $\frac{1}{2}$	.13	.20	.26

Note: Stock Rolls, 6 feet x 50 feet.

Asbestos Roll Fire-Felt

This Felt, being made from the pure fibres of asbestos is absolutely fire-proof, flexible, strong and proof against decay; a superior non-heat conductor, deadening felt, and unsurpassed for covering heaters and heater pipes, steam and hot water pipes; also for covering irregular fittings and bent pipes, lining dry rooms, ceilings, annealing ovens, etc. It also makes a good bench mat where soldering may be done or on which hot metals may be laid without danger of burning or loss.

In Rolls 300 Square Feet, 36 Inches Wide

$\frac{3}{32}$ inch thick, per square foot.....	.12
$\frac{1}{8}$ inch thick, per square foot.....	.16
$\frac{1}{4}$ inch thick, per square foot.....	.20

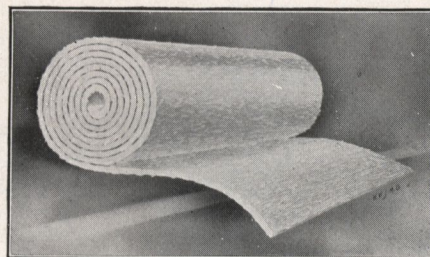


Fig. 3982. Asbestos Roll Fire-Felt

Asbestos Paper and Board

(Not Illustrated)

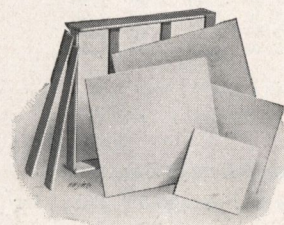
Composed of fibrous asbestos, taking the place of asbestos sheathing where a heavier material is desired; also suitable for joint packing, partition linings, etc. Put up in rolls 36 inches wide, approximating 100 pounds each, as follows:

$\frac{1}{32}$ inch thick, weight about 16 pounds to 100 square feet.
$\frac{1}{16}$ inch thick, weight about 35 pounds to 100 square feet.

Full Rolls, per pound.....	Market prices
Broken Rolls, per pound.....	Market prices

$\frac{3}{32}$ inch thick, weight about 55 pounds to 100 square feet.
$\frac{1}{8}$ inch thick, weight about 70 pounds to 100 square feet.

Full Rolls, per pound.....	Market prices
Broken Rolls, per pound.....	Market prices

Fig. 3983
Asbestos Mill Board

Asbestos Mill Board

Approximate Weight Per Sheet, 40 x 40 Inches

Thickness, inches.....	$\frac{1}{32}$	$\frac{3}{64}$	$\frac{1}{16}$	$\frac{3}{32}$	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$
Approximate Weight, pounds	2	3	4	6	8	12	14	23	27
Price per pound.....	.10								

We carry in stock hard, medium, and soft Mill Board. We send medium unless otherwise specified.

Asbestocel Corrugated Paper

(Not Illustrated)

Consists of Corrugated Asbestos Paper backed by a plain or flat layer of the same material. Being flexible, it can be readily handled and cut into any desired lengths, which makes it specially adapted for wrapping heater pipes and other surfaces requiring thin, flexible insulation, lining floors, etc. Furnished in rolls 3 feet wide.

One-Ply about $\frac{1}{4}$ inch thick, 250 square feet per roll, per square foot.....	.10
--	-----

Cements, Mineral Wool and Asbestos Wick Packing



Fig. 3990
Magnesia Cement

85 Per Cent. Magnesia Plastic Cement

Magnesia Cement is used for the same purpose as block covering; and it is also especially recommended for irregular surfaces, and fittings where it is impossible to apply magnesia blocks. It is made from the same composition, and is furnished in dry form put up in sacks of about 60 pounds each, or sufficient to cover 30 square feet of surface 1 inch thick.

Per Bag, weighing about 60 pounds..... 7.50

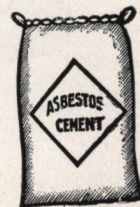


Fig. 3991
Asbestos Cement

Asbestos Cement

Composed almost wholly of asbestos fibres and forms a light, porous material, partaking of the nature of a felt and a cement. It is an efficient non-conducting covering for boilers, domes, and irregular surfaces, and is furnished dry, in bags.

Special Hard Finish No. 302, per bag weighing about 120 pounds.....	4.50
Finishing No. 340, per bag weighing about 100 pounds.....	3.00
Regular No. 352, per bag weighing about 100 pounds.....	3.00
Regular No. 364, per bag weighing about 100 pounds.....	3.00

Asbestos Fireite Furnace Cement

(Not Illustrated)

The strongest and most durable cement in use for "setting up" and repairing broken joints in furnaces, ranges, heaters and stoves. It is prepared ready for use, adheres readily and firmly to castings and tin, and "sets" in a few hours. When subjected to heat it vitrifies without shrinking or becoming porous; it is inodorous, and effectually prevents escape of smoke, gases and dust, thus insuring perfect draft.

10-Pound Cans, each.....	.75	One dozen in case, per dozen.....	7.20
5-Pound Cans, each.....	.50	Two dozen in case, per dozen.....	3.60
2-Pound Cans, each.....	.25	Two dozen in case, per dozen.....	1.92
1-Pound Cans, each.....	.15	Two dozen in case, per dozen.....	1.20

Asbestos Vitrex Retort Cement

(Not Illustrated)

This cement is now in general use in gas and chemical works for repairing broken clay and iron retorts and pipes, and cementing fittings, connecting pipes and flange-joints, also for cementing joints in stone, wood and metals. It is composed of asbestos and fire and acid-proof cementing materials, is prepared ready for use and can be easily applied with a trowel; hardens rapidly, and when subjected to intense heat it vitrifies without shrinking. It is not injured by nitric or sulphuric acids, petroleum oils, etc., and effectually prevents the escape of vapors.

10-Pound Cans, each.....	1.00	One dozen in case, per dozen.....	10.50
5-Pound Cans, each.....	.60	Two dozen in case, per dozen.....	6.75
2-Pound Cans, each.....	.35	Two dozen in case, per dozen.....	3.75
1-Pound Cans, each.....	.25	Two dozen in case, per dozen.....	2.25

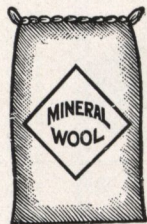


Fig. 3992
Mineral Wool

Mineral Wool

Mineral Wool has become such a staple article and is so generally used for all purposes of fire-proofing and cold storage insulation, we do not deem it necessary to comment further on the subject. In estimating the quantity required, our select mineral wool weighs about 12 pounds per cubic foot, or $\frac{3}{4}$ pound will cover one square foot one inch thick.

Mineral Wool is shipped in sacks weighing about 60 pounds each. In all cases we charge extra for sacks which, however, will be refunded on their return in good condition, freight charges prepaid.

Select Mineral Wool, prices on application.

Asbestos Wick Packing

Our Wick Packing is composed of selected asbestos fibre, spun into strands which can be separated and made into the form of a soft strong lampwick which can be packed into any desired shape, around valve and other stems.

Furnished in 1-pound balls and on 5 and 10-pound spools as follows:

Wick Packing, per pound..... On application

Customers ordering will please give size of balls or spools wanted; without such instructions we ship 1-pound balls.



Fig. 3993
Asbestos Wick

Jenkins Pump Valves

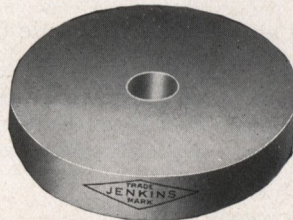


Fig. 4000. Pump Valve

Schedule of Principal Compounds and Service for Which They Are Guaranteed

No. 80 Compound

Hot Water Valve, for pressures up to 250 pounds, temperature not less than 180 degrees, nor more than 300 degrees. For Air Compressors these valves have been very successful. While extremely hard, they possess sufficient elasticity to insure absolute tightness under various conditions of pressure.

They will give entire satisfaction in oils, naphtha, syrups, beer, acids and other destructive fluids.

No. 88 Compound

For warm water up to 175 pounds pressure; cold water 50 to 400 pounds pressure.

For mining and high pressure service, or for elevator service, where the water is often slightly oily, these valves have proved equal to every requirement.

No. 93 Compound

Cold Water Valve, for pressures up to 175 pounds; or 125 pounds pressure to 180 degrees.

No. 94 Compound

Cold Water Valve, for pressures to 100 pounds.

No. 15 Compound

For Cold Water Pressure up to 75 pounds, and for Condenser Air Pumps, etc.

The question often arises as to which compound is best suited for use in vacuum pumps. This can be answered only when the service in which the pump is used is known. For example, the pump used on the returns of a vacuum heating system which often carry considerable oil, would require a different valve from a pump used in dry vacuum service. Ordinarily any of our softer valves will give good service on vacuum work, but to secure the best valves for a specific purpose a brief description of the service in which the valves are to be used is necessary when ordering.

Some types of Condenser Air Pumps use valves that are held closely to the seat at center, curving up from that point to outer edge of valve as they lift; for this work, also for square or oblong flap valves, a soft valve is required, and for this purpose we recommend our No. 15 Compound. It is a tough, flexible valve, and will stand water heated 120 to 180 degrees under moderate pressure, and give long service.

Dimensions and List Prices

Dimensions				Dimensions				Dimensions				Dimensions			
Outside Diam.	Thick-ness	Hole	List Price Each	Outside Diam.	Thick-ness	Hole	List Price Each	Outside Diam.	Thick-ness	Hole	List Price Each	Outside Diam.	Thick-ness	Hole	List Price Each
1 1/2	3/8	3/8	.13	3 5/8	1 1/2	5/8	.50	4 5/8	5/8	5/8	.95	6 1/4	5/8	5/8	1.90
1 3/4	3/8	3/8	.20	3 5/8	1 1/2	5/8	.50	4 5/8	5/8	5/8	1.05	6 1/4	5/8	5/8	2.25
2	3/8	3/8	.25	3 5/8	1 1/2	5/8	.56	4 5/8	5/8	5/8	1.15	6 1/4	5/8	5/8	2.25
2 1/2	1/2	1/2	.33	3 5/8	1 1/2	5/8	.60	4 5/8	5/8	5/8	1.20	6 1/4	5/8	5/8	2.35
2 1/8	1/2	1/2	.17	3 3/4	1 1/2	5/8	.56	4 3/4	1 1/2	5/8	.82	6 3/8	5/8	5/8	2.75
2 1/4	3/8	3/8	.14	3 3/4	5/8	5/8	.64	4 3/4	1 1/2	5/8	.90	6 3/8	5/8	5/8	2.00
2 1/4	1/2	1/2	.20	3 3/4	5/8	5/8	.67	4 3/4	5/8	5/8	1.05	6 3/8	5/8	5/8	2.40
2 3/8	3/8	3/8	.17	3 3/4	3/4	1/2	.70	4 3/4	5/8	5/8	1.23	6 3/8	5/8	5/8	2.85
2 3/8	1/2	1/2	.20	3 7/8	1/2	1/2	.56	4 3/4	3/4	1/2	1.28	6 3/8	5/8	5/8	2.90
2 1/2	3/8	3/8	.20	3 7/8	3/4	1/2	.85	4 3/4	3/4	1/2	1.28	6 3/8	1	3/4	3.35
2 1/2	1/2	1/2	.23	4	1/2	1/2	.60	4 3/4	3/4	5/8	1.50	6 3/4	3/4	3/4	2.80
2 1/2	1/2	3/8	.25	4	1/2	1/2	.62	5	3/2	1/2	.90	6 3/4	1	3/4	3.60
2 1/2	5/8	5/8	.28	4	1 1/8	5/8	.70	5	5/8	5/8	1.20	7	5/8	5/8	2.45
2 3/4	1/2	5/8	.28	4	5/8	3/4	.75	5	3/4	3/4	1.45	7	3/4	3/4	3.10
2 3/4	1/2	5/8	.28	4	5/8	3/4	.76	5	3/4	5/8	1.45	7	3/4	1/2	3.30
2 3/4	5/8	5/8	.34	4	5/8	3/4	.80	5	3/4	1/2	1.45	7	1	1	3.80
3	1/2	1/2	.34	4	1 1/8	7/8	.82	5 1/8	3/4	1/2	1.50	7	1	3/4	3.80
3	1/2	3/8	.34	4	3/4	3/4	.90	5 1/4	5/8	3/4	1.28	7	1	1/2	3.80
3	5/8	5/8	.42	4	3/4	1 1/8	.90	5 1/4	5/8	5/8	1.36	7 1/4	5/8	5/8	2.60
3	5/8	5/8	.42	4	3/4	5/8	.90	5 1/4	3/4	1 1/8	1.56	7 1/4	3/4	3/4	3.15
3	3/4	1/2	.50	4 1/8	3/4	3/4	.92	5 1/4	3/4	5/8	1.56	7 1/4	1	3/4	4.25
3 1/8	1/2	1/2	.40	4 1/8	3/4	1/2	.95	5 1/2	5/8	5/8	1.45	7 3/8	7/8	1 1/4	4.50
3 1/8	5/8	5/8	.45	4 1/8	5/8	5/8	.98	5 1/2	3/4	1 1/8	1.65	7 1/2	5/8	5/8	2.70
3 1/8	5/8	1/2	.45	4 1/4	5/8	1 1/8	.85	5 1/2	3/4	5/8	1.67	7 1/2	3/4	3/4	3.25
3 1/4	1/2	1/2	.40	4 1/4	5/8	5/8	.85	5 1/2	3/4	1/2	1.73	7 1/2	3/4	1/2	3.35
3 1/4	1/2	3/8	.42	4 1/4	5/8	3/8	.88	5 1/2	7/8	3/4	2.00	7 1/2	7/8	1 1/2	3.80
3 1/4	5/8	5/8	.50	4 1/4	3/4	5/8	.95	5 3/4	5/8	5/8	1.85	7 1/2	1	1 1/2	4.25
3 1/4	5/8	5/8	.50	4 3/8	5/8	1/2	.92	6	1/2	1/2	1.36	7 1/2	1	3/4	4.30
3 3/8	1/2	5/8	.42	4 3/8	5/8	3/8	.92	6	5/8	5/8	1.80	8	3/4	3/4	3.80
3 1/2	1/2	5/8	.45	4 1/2	1/2	5/8	.76	6	3/4	7/8	2.05	8	3/4	1 1/4	3.80
3 1/2	1/2	1/2	.48	4 1/2	1/2	1/2	.80	6	3/4	3/4	2.05	8	1	1	4.25
3 1/2	5/8	5/8	.52	4 1/2	5/8	3/4	.80	6	3/4	5/8	2.10	8	1	3/4	4.50
3 1/2	5/8	1 1/8	.56	4 1/2	5/8	5/8	.95	6	3/4	1/2	2.10	8	1	1	5.00
3 1/2	5/8	5/8	.56	4 1/2	5/8	1/2	1.00	6	3/4	1 1/2	2.10	8	1	3/4	5.00
3 1/2	5/8	3/8	.60	4 1/2	3/4	5/8	1.15	6	1 1/4	7/8	2.35	8	1	5/8	5.00
3 1/2	3/4	1/2	.67	4 5/8	1 1/8	5/8	.85	6	1	3/4	2.80	8	1	1/2	5.00

Pump Leathers



Fig. 4010
Ring Packing
for Cylinders



Fig. 4012
Plunger Leather
Not Crimped



Fig. 4013
Suction Valve
Leather



Fig. 4014
Plunger Leather
Crimped

All Cupped Leather Packings are made of stock of uniform thickness, accurately calipered to size, and made with the flesh side of the hide out, which gives the most durable wearing surface.

Hydraulic Cupped Leather Packings are specially treated by a process which renders the leather absolutely impervious to water. The oily nature of this treatment acts as a lubricant as long as the packing lasts, making the pumping easy.

Diameter of Cylinders Size, Inches	Ring Packings For Cylinders		Suction Valve Leathers		Plunger Leathers Not Crimped		Plunger Leathers Crimped		Hydraulic Plunger Leathers, Crimped	
	List Dozen	List Each	List Dozen	List Each	List Dozen	List Each	List Dozen	List Each	List Dozen	List Each
$\frac{3}{4}$ to $1\frac{1}{2}$, inc.	....	...	....	....	....	...	1.30	.15	1.35	.15
$1\frac{3}{4}$	....	...	....	....	....	...	1.40	.15	1.50	.15
2	.75	.10	1.50	.15	1.20	.15	1.75	.20	1.85	.20
$2\frac{1}{4}$	1.10	.15	1.60	.20	1.35	.15	2.00	.20	2.15	.25
$2\frac{1}{2}$	1.10	.15	2.00	.20	1.55	.15	2.65	.30	2.80	.35
$2\frac{3}{4}$	1.20	.15	2.15	.25	1.60	.20	3.25	.35	3.50	.40
3	1.30	.15	3.00	.30	1.75	.20	3.50	.35	3.75	.40
$3\frac{1}{4}$	1.35	.15	3.50	.35	2.25	.25	4.30	.45	4.50	.50
$3\frac{1}{2}$	1.50	.15	4.00	.40	2.55	.25	5.35	.55	5.60	.60
$3\frac{3}{4}$	....	...	....	....	....	...	6.00	.60	6.30	.65
4	1.90	.20	5.10	.50	3.20	.35	6.40	.65	6.70	.70
$4\frac{1}{4}$	....	...	....	....	....	...	7.75	.80	8.00	.85
$4\frac{1}{2}$	2.15	.25	7.20	.75	4.30	.45	8.40	.85	8.80	.90
$4\frac{3}{4}$	....	...	....	....	....	...	9.55	.95	10.00	1.00
5	2.70	.30	8.00	.80	....	...	11.00	1.10	11.35	1.15
$5\frac{3}{4}$	....	...	....	....	....	...	15.65	1.60	16.30	1.65
6	4.00	.40	11.20	1.15	....	...	15.65	1.60	16.30	1.65
$6\frac{3}{4}$	....	...	....	....	....	...	22.00	2.20	22.80	2.30
7	5.85	.60	17.35	1.75	....	...	22.35	2.25	23.35	2.35
$7\frac{3}{4}$	....	...	....	....	....	...	32.00	3.25	33.35	3.35
8	7.00	.70	....	....	....	...	39.00	3.90	40.00	4.00

Note: For solid crimps or crimps with special small hole in sizes 2-inch and larger an extra charge of 10 per cent. over the prices of regular crimps will be made.

Wear Well Leather Packings

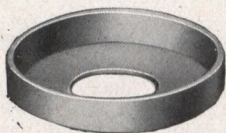


Fig. 4015. Cup Packing

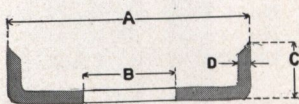


Fig. 4016. U Packing

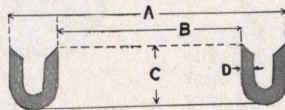


Fig. 4017. Flange Packing

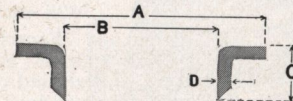
Sectional Views Wear-Well Leather Packings



Cup Packing



U Packing



Flange Packing

The sectional views show the dimensions required to enable us to quote prices or fill orders, and they should be carefully noted and followed. These packings have been widely used for the past 17 years and are guaranteed to give maximum service. State whether packings are for air, oil or water, and the pressure under which they will be used. If you have experienced leather packing troubles, explain their nature so that the proper tannage can be selected to avoid them.

Albany Grease



Fig. 4020

Price List

In Cans, containing 1 lb., per lb.	.25
In Cans, containing 5, 10 and 25 lbs., per lb.	.20
In Cans, containing 50 lbs., per lb.	.17
In Kegs, containing about 125 lbs., per lb.	.14
In Half-Barrels, containing about 200 lbs., per lb.	.13
In Barrels, containing about 400 lbs., per lb.	.12

Cups filled with Albany Grease run a great length of time without refilling, depending upon the size and speed of the shaft. The quality of the seven different numbers of Albany Grease is the same, the difference being only in the consistency and melting point. During cold weather use only the soft numbers.



Fig. 4021

Deegan Thread Joint Seal

Recommended for thread joints of every description. Makes a perfect joint with the poorest thread. Will not run, bake nor dry out. Not affected by heat or cold, as no temperature will make it set.

Put up in 1, 5 and 10-pound cans.

Price per pound	.50
-----------------	-----

Fig. 4023
Callahan's
Steam Joint
Cement

Callahan's Steam Joint Cement

Fills up the defects in fittings and threads and will never allow leaks when used as directed. Makes a rustless joint which can be separated with ease.

Package, lbs.	5	10	25	50
Price per lb.	.20	.20	.20	.20

Callahan's Rubber Roof Cement

Colors—Red, Slate and Yellow

Most adhesive roof cement made. Will stick to a wet roof.

Especially adapted for stopping leaks in roofs, cementing joints around chimneys, skylights, dormer windows, gutters, etc. Being very adhesive can be used to fasten broken or loose slates, or mending leaking places of any kind in roofs or walls. Adheres firmly to tin, glass, slate, wood.

Fig. 4025. Rubber
Roof Cement

5-pound Can, Price per pound	.06
10-pound Can, Price per pound	.05½
100-pound Can, Price per pound	.04

No. O.—Atmospheric Melting Point 50° to 60° Fahr. A soft grease used in extreme cold weather on exposed journals.

No. 1.—Atmospheric Melting Point 60° to 80° Fahr. A grease used in cold weather on ordinary journals and slow running journals with heavy pressure.

No. 2.—Atmospheric Melting Point 80° to 100° Fahr. Commonly known as winter grease in most engine rooms.

No. 3.—Atmospheric Melting Point 100° to 110° Fahr. Commonly known as summer grease. For the general lubrication of every bearing on any kind of machinery and line shaft.

No. X.—Atmospheric Melting Point 110° to 125° Fahr. A consistency for bearings that are heavily loaded and likely to run warm.

No. XX.—Atmospheric Melting Point 125° to 150° Fahr. Has a higher melting point and will overcome lubricating difficulties beyond the reach of No. X.

No. XXX.—Atmospheric Melting Point 150° to 175° Fahr. A consistency for use where bearing temperature is high. Never fails to overcome severe lubricating conditions.

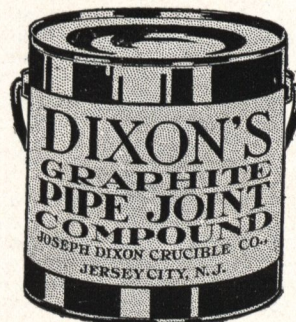
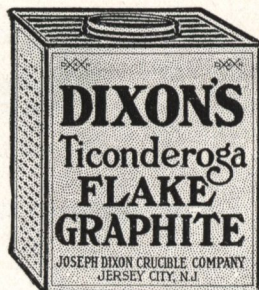


Fig. 4022. Dixon's Graphite

Pipe Joint Compound

Not a cement which hardens, but a true lubricant for the threads of pipes, bolts, nuts, turnbuckles, etc. Also valuable on flanges, gaskets, boiler tube caps, gas retort doors, etc. Joints can never rust, corrode or stick and may be separated without any difficulty after any length of time.

No.	693	694	695	696
Package, pounds	1	5	10	25
Per pound	.40	.36	.30	.28

Fig. 4024. Dixon's
Flake Graphite

Dixon's Flake Graphite

Has many valuable applications as a lubricant for cylinders, valves and bearings, either alone or mixed with oils and greases. Valuable for coating gaskets and packing, for pipe fittings, etc.

Prepared in the coarser or No. 1 Flake and the finer or No. 2 size. Orders should specify the No. wanted.

Trade No.		Per Case	Per Pkg.
632	1-lb. Paper Can (36 in case)	20.00	.70
633	5-lb. Tin Can (10 in case)	27.00	3.00
634	10-lb. Tin Can (5 in case)	26.00	5.50
644	25-lb. Box		11.00
645	50-lb. Box		20.50
646	100-lb. Keg, per pound		.39
Price for No 1 and No. 2 grade is the same.			

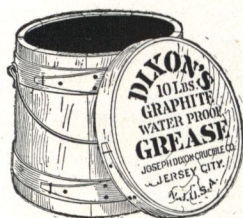


Fig. 4030
Graphite Grease

Dixon's Waterproof Graphite Grease

A high grade lubricant for loose bearings, gears, slides, etc. Possesses great adhesiveness and will not be thrown from gears, chains, wire ropes, sprocket chains, etc., traveling at high speed. Cannot be washed off by fresh or salt water, by acid or alkaline water, adapting it especially for every sort of machinery exposed to water or the weather.

5-Pound Tin Can, per pound.....	.36
10-Pound Firkin, per pound.....	.30
25-Pound Firkin, per pound.....	.28
50-Pound Keg, per pound.....	.26
100-Pound Keg, per pound.....	.24
Half Barrel, per pound.....	.22
400-Pound Barrel, per pound.....	.20

5-pound cans can be furnished in case lots of 10 cans, and 10-pound firkins 6 to the case.

Dixon's Solid Belt Dressing

Positively stops all slipping. Put up in cylindrical bars, 2 x 8 inches, a shape and size very convenient for the hand. It is applied to belts without stopping the machinery, saving trouble and delay. Cannot cause clogging, hardening or cracking of the belt even with years of use. Preserves the original elasticity and pliability of the leather and affords great driving power.

Equally satisfactory for leather, rubber, canvas or fabric belting.

Price per Bar	.70
Price per Case, 25 Bars	15.00

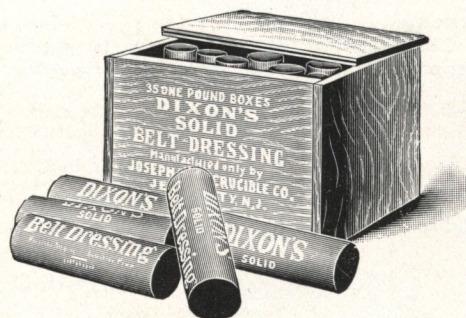


Fig. 4031. Dixon's Solid Belt Dressing



Fig. 4032
Belt Dressing

Dixon's Traction Belt Dressing

Preserves the leather and restores the lost efficiency and clinging power of neglected belts. Gives new belts elasticity and flexibility, so that only a heavy overload can cause them to slip. Imparts clinging power, not stickiness; does not readily gather dust, and thoroughly waterproofs the leather. In paste form, to be applied warm in small quantities. An excellent dressing for manila transmission cables. Penetrates into the core, waterproofs the fibres, keeps them flexible and prevents rotting.

Trade Nos.....	664	665	666	667	668	669
Packages.....	5-lb. Pail	10-lb. Pail	25-lb. Pail	50-lb. Pail	100-lb. Keg	375-lb. Bbl.
Price per lb.....	.70	.60	.50	.44	.40	.36

Dixon's Silica Graphite Paint

Adapted to every class of exposed metal and wood surfaces, bridges, steel cars, signal apparatus, fences, smokestacks, boiler fronts, poles, tanks, ornamental iron works, in fact, wherever lasting protection is desired. The lubricating qualities of graphite causes the Silica Graphite to be easily applied, effecting a saving in labor and brushes. Its protective qualities upon wood and metal surfaces have been demonstrated for nearly 50 years. Made one quality, four colors: Olive Green, Natural or Graphite Gray, Dark Red and Black.

1/2-Gallon Pail, 6 in case, per gallon.....	4.70
1-Gallon in Pail, 6 in case, per gallon.....	4.50
5 Gallons in Keg, per gallon	4.30

Larger packages quoted on request.



Fig. 4033
Silica Graphite Paint



Fig. 4034. Bronzing
Liquid
Per Gallon..... 1.50



Fig. 4035
Gold Bronze, lb.... 2.00
Alum. Bronze, lb... 3.00



Fig. 4036. White Lead
Per pound..... .30



Fig. 4037. Red Lead
Per pound..... .30

Smooth-On Products

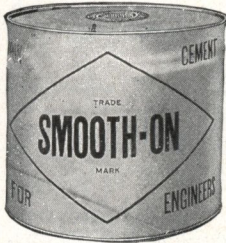


Fig. 4040

Price List, Nos. 1, 2, 3,
4, 5, 6 and 7
Per pound..... .50

Smooth-On Iron Compounds, Nos. 1 and 2

Sold in 1, 5, 10 and 25-Pound Blue Labeled Cans

Are chemical Iron Cements for repairing leaks or breaks in castings and for making connections in steam or hydraulic work. They withstand fire. No. 1 quick hardening. No. 2 slow hardening and hydraulic. Applied as a paste or putty. Prepared and sold in powder form. Must be applied to cold metal.

Smooth-On Elastic Cement No. 3

Sold in 1, 5 and 10-Pound Gray Labeled Cans

An Iron Cement especially prepared for use on all seams of boilers or tanks to stop leaks, also for boiler patching and for screw-thread joints. Prepared and sold in putty form. This cement is hardened by heat. Applied as a paint, paste or putty. May be applied to hot metal.

Smooth-On Castings Cement No. 4

Sold in 1, 5, 10 and 25-Pound Yellow Labeled Cans

Is an Iron Cement for repairing blemishes, blowholes or defects in iron or steel castings, made in two grades. Prepared and sold in powder form. Applied as a putty.

Smooth-On Joints Caulking Cement No. 5

Sold in 1, 5, 10 and 25-Pound Cans. Not Sold in Bulk

Is an Iron Caulking Cement for bell and spigot cast iron soil and greenhouse pipes, in place of caulking lead and in combination with lead.

Smooth-On Rivet Cement No. 6

Sold in 1, 5 and 10-Pound White Label Cans

A plastic Iron Cement prepared and sold in putty form, for making tight joints in structural iron or steel work, filling up rivet heads, seams and uneven places, on plates of iron or steel. Also for placing or resetting glass in metal skylights and for making tight joints between iron work and concrete foundations.

Smooth-On Iron Cement No. 7

Sold in 5, 10 and 25-pound Cans and 50 and 100-Pound Iron Packages

Smooth-On Iron Cement No. 7 is a hydraulic iron cement prepared and sold in powder form, applied alone or in combination with Portland Cement or with Portland Cement and Sand.

For waterproofing, dustproofing, oilproofing, gasoline-proofing, and hardening concrete.

Smooth-On Iron Concrete Paint

Sold in $\frac{1}{2}$, 1 and 5-Gallon Tins

List Price, per gallon..... 3.00

Smooth-On Iron Concrete Paint is a fluid preparation of Smooth-On Iron Cement for surfacing concrete to prevent dusting, to waterproof and increase wearing quality.

Quantity required: Each gallon weighs 21 pounds and under average conditions will cover 325 square feet with one coat.

Smooth-On Fire Brick Cement No. 8

Sold in 10, 25, 50, 100, 200 and 300-Pound Packages

Smooth-On Fire-Brick Cement No. 8 is a combination of Smooth-On Iron Cement and the very best quality of heat-resisting fire clay.

They are combined under heat and pressure to a very fine powder. Unequaled for setting or coating fire bricks.

Average quantity to set 100 bricks, 35 pounds; to coat 10 square feet, 1 pound.

List Price, per pound..... .50

Smooth-On Coated Corrugated Gaskets

List Price, per square inch surface measurement..... .01

Made from specially prepared iron—cut to size—corrugated and then coated with Smooth-On Elastic Iron Cement. They are unequaled for withstanding steam, water, gas or oil under any pressure or temperature.

Metal Polishes, Etc.



Fig. 4050
Solarine Metal Polish

Half pint Can35
Also put up in 1 pint, 1 quart, half gallon
and 1 gallon cans.



Fig. 4051
Brilliant Metal Polish

Half pint Can50
Also put up in 1 pint, 1 quart, half gallon and
1 gallon cans, and in paste form in 3 ounce,
one half and 1 pound boxes.



Fig. 4052
Gilt Edge Metal Polish

Half pint Can50
Also put up in 1 pint, 1 quart, half gallon
and 1 gallon cans.



Fig. 4053
Blue Ribbon Metal Polish

Half pint Can50
Also put up in 1 pint, 1 quart, half gallon
and 1 gallon cans.

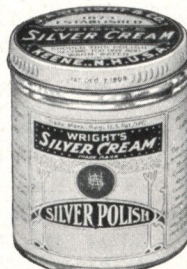


Fig. 4054
Silver Cream Metal Polish

8-ounce Jar50
Also put up in 16 ounce jars, and 1 gallon
tins.
For silverware, cut glass, jewelry, marble,
porcelain, polished brass, etc.



Fig. 4055
Universal Putz Pomade

3-ounce Can10
1/2-pound Can25
1-pound Can50
Also put up in 5 and 10 pound cans.
Per pound50

Metaloid—The New Metal



Fig. 4056

For stopping
leaks and mend-
ing breaks in
iron, brass, lead
and copper pipe
and all kinds of
pipe fittings,
boilers, radiators,
cylinders, cast-
ings, etc. Repairs
all leaks and
needs no fire or
heat.

Price List

1/2 pound Package with Liquid	.85
1 pound Package with Liquid	1.50
5 pound Package with Liquid	7.00
10 pound Package with Liquid	13.00
25 pound Package with Liquid	30.00
100 pound Package with Liquid	95.00

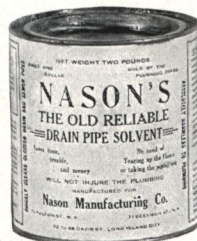


Fig. 4057
Nason's Old Reliable

For removing obstructions from clogged
drain pipes. 2 1/4 - pound Can 1.00



Fig. 4058
Le Page's Belt Cement
In 1 and 2 pound cans

List price, per pound 1.00



Fig. 4059
Putty

Per pound20



Fig. 4059A
Roof Putty

Fig. 4059A Elastic Roof Putty

Put up in 1, 2, 3, 5 and 10 pound cans, 25 and 50 pound kits
and 100 and 200 pound kegs. Will stop any reasonably sized
hole in tin, zinc, slate shingles, wood or composition roof, gutter-
ing or flashing, or on any job where an everlasting leak-proof
cement is desired.

Fig. 4059B Regal Roof Coating

Put up in 1/8, 1/4, 1/2, 1, 2, 3, 5 and 10 gallon cans, 1/2 and full
barrels, in a liberal selection of colors. Can be applied to any
of the ready roofing, tin roofs, etc.



Fig. 4059B
Roof Coating

Prices for Roof Putty and Regal Roof Coating are governed by quantity or size of container and are therefore quoted on quantity speci-
fications. Standard colors of Regal Coating are red, maroon, brown, terra cotta, green or black. Orders or inquiries should specify color desired.

Machine Bolts

With Square Heads and Square Nuts

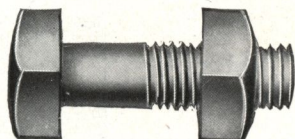


Fig. 4060. Square Head and Nut

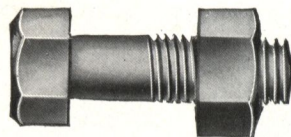


Fig. 4061. Hexagon Head and Nut

List Prices Per 100 Pieces—Square Head and Nut

Length Inches	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$
$\frac{3}{4}$ — $1\frac{1}{2}$	1.70	2.00	2.40	2.80	3.60	5.20	5.20	7.70	10.50	15.10	22.50	30.00
2	1.78	2.12	2.56	3.00	3.86	5.58	5.58	8.25	11.20	16.00	23.70	31.50
$2\frac{1}{2}$	1.86	2.24	2.72	3.20	4.12	5.96	5.96	8.80	11.90	16.90	24.90	33.00
3	1.94	2.36	2.88	3.40	4.38	6.34	6.34	9.35	12.60	17.80	26.10	34.50
$3\frac{1}{2}$	2.02	2.48	3.04	3.60	4.64	6.72	6.72	9.90	13.30	18.70	27.30	36.00
4	2.10	2.60	3.20	3.80	4.90	7.10	7.10	10.45	14.00	19.60	28.50	37.50
$4\frac{1}{2}$	2.18	2.72	3.36	4.00	5.16	7.48	7.48	11.00	14.70	20.50	29.70	39.00
5	2.26	2.84	3.52	4.20	5.42	7.86	7.86	11.55	15.40	21.40	30.90	40.50
$5\frac{1}{2}$	2.34	2.96	3.68	4.40	5.68	8.24	8.24	12.10	16.10	22.30	32.10	42.00
6	2.42	3.08	3.84	4.60	5.94	8.62	8.62	12.65	16.80	23.20	33.30	43.50
$6\frac{1}{2}$	2.50	3.20	4.00	4.80	6.20	9.00	9.00	13.20	17.50	24.10	34.50	45.00
7	2.58	3.32	4.16	5.00	6.46	9.38	9.38	13.75	18.20	25.00	35.70	46.50
$7\frac{1}{2}$	2.66	3.44	4.32	5.20	6.72	9.76	9.76	14.30	18.90	25.90	36.90	48.00
8	2.74	3.56	4.48	5.40	6.98	10.14	10.14	14.85	19.60	26.80	38.10	49.50
9	2.90	3.80	4.80	5.80	7.50	10.90	10.90	15.95	21.00	28.60	40.50	52.50
10	3.06	4.04	5.12	6.20	8.02	11.66	11.66	17.05	22.40	30.40	42.90	55.50
11	3.22	4.28	5.44	6.60	8.54	12.42	12.42	18.15	23.80	32.20	45.30	58.50
12	3.38	4.52	5.76	7.00	9.06	13.18	13.18	19.25	25.20	34.00	47.70	61.50
13	....	....	6.08	7.40	9.58	13.94	13.94	20.35	26.60	35.80	50.10	64.50
14	....	....	6.40	7.80	10.10	14.70	14.70	21.45	28.00	37.60	52.50	67.50
15	....	....	6.72	8.20	10.62	15.46	15.46	22.55	29.40	39.40	54.90	70.50
16	....	....	7.04	8.60	11.14	16.22	16.22	23.65	30.80	41.20	57.30	73.50
17	....	....	7.36	9.00	11.66	16.98	16.98	24.75	32.20	43.00	59.70	76.50
18	....	....	7.68	9.40	12.18	17.74	17.74	25.85	33.60	44.80	62.10	79.50
19	....	....	8.00	9.80	12.70	18.50	18.50	26.95	35.00	46.60	64.50	82.50
20	....	....	8.32	10.20	13.22	19.26	19.26	28.05	36.40	48.40	66.90	85.50
21	....	....	....	....	13.74	20.02	20.02	29.15	37.80	50.20	69.30	88.50
22	....	....	....	....	14.26	20.78	20.78	30.25	39.20	52.00	71.70	91.50
23	....	....	....	....	14.78	21.54	21.54	31.35	40.60	53.80	74.10	94.50
24	....	....	....	....	15.30	22.30	22.30	32.45	42.00	55.60	76.50	97.50
25	....	....	....	....	15.82	23.06	23.06	33.55	43.40	57.40	78.90	100.50
26	....	....	....	....	....	....	....	34.65	44.80	59.20	81.30	103.50
27	....	....	....	....	....	....	....	35.75	46.20	61.00	83.70	106.50
28	....	....	....	....	....	....	....	36.85	47.60	62.80	86.10	109.50
29	....	....	....	....	....	....	....	37.95	49.00	64.60	88.50	112.50
30	....	....	....	....	....	....	....	39.05	50.40	66.40	90.90	115.50

The following extras are understood as a part of this list:

Bolts with Hexagon Heads or Hexagon Nuts, 10 per cent. extra.

If both Hexagon Heads and Hexagon Nuts, 20 per cent. extra.

Joint Bolts with Oblong Nuts, 10 per cent. extra.

Bolts with Tee, Askew, Eccentric, or Cube Heads, 20 per cent. extra.

Bolts requiring extra upsets to form head, 20 per cent. extra for each upset.

Special Bolts with irregular threads and unusual dimensions of heads or nuts will be charged extra at the discretion of the manufacturer.

Button Heads and Countersunk Heads, round neck, take above list.

Bolts without nuts, 6 inches and shorter, 10 per cent. additional discount.

Longer than 6 inches, 5 per cent additional discount.

Intermediate lengths take next higher list.

Carriage Bolts

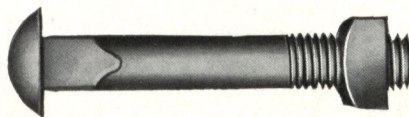


Fig. 4070. Carriage Bolt

List Prices Per 100 Pieces

Length Inches	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{5}{8}$ and $\frac{3}{4}$	$\frac{3}{4}$
$1\frac{1}{2}$	1.00	1.40	1.90	2.20	....	....	....
2	1.10	1.52	2.06	2.40	....	....	....
$2\frac{1}{2}$	1.20	1.64	2.22	2.60	3.25	5.75	8.50
3	1.30	1.76	2.38	2.80	3.53	6.13	9.00
$3\frac{1}{2}$	1.40	1.88	2.54	3.00	3.81	6.51	9.50
4	1.50	2.00	2.70	3.20	4.09	6.89	10.00
$4\frac{1}{2}$	1.60	2.12	2.86	3.40	4.37	7.27	10.50
5	1.70	2.24	3.02	3.60	4.65	7.65	11.00
$5\frac{1}{2}$	1.80	2.36	3.18	3.80	4.93	8.03	11.50
6	1.90	2.48	3.34	4.00	5.21	8.41	12.00
$6\frac{1}{2}$	2.00	2.60	3.50	4.20	5.49	8.79	12.50
7	2.10	2.72	3.66	4.40	5.77	9.17	13.00
$7\frac{1}{2}$	2.20	2.84	3.82	4.60	6.05	9.55	13.50
8	2.30	2.96	3.98	4.80	6.33	9.93	14.00
$8\frac{1}{2}$	2.40	3.08	4.14	5.00	6.61	10.31	14.50
9	2.50	3.20	4.30	5.20	6.89	10.69	15.00
$9\frac{1}{2}$	2.60	3.32	4.46	5.40	7.17	11.07	15.50
10	2.70	3.44	4.62	5.60	7.45	11.45	16.00

Bolts with Hexagon Nuts, 15 per cent. extra.
Intermediate lengths take next higher list.
Regularly made in lengths to 20 inches.

Stud Bolts

With U. S. Standard Chamfered and Trimmed Hexagon Nuts

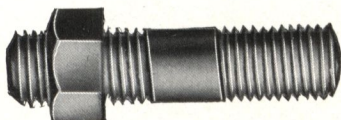


Fig. 4071. With Nut

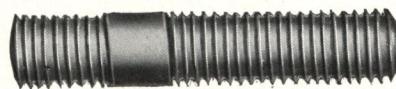


Fig. 4072. Without Nut

Price Per 100

Diameter, inches.....	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$
Number of Threads to Inch.....	16	14	13	12	11	10	9	8	7	7
Length Over All:										
$1\frac{1}{2}$ inches.....	4.00	5.10	5.50	....	....	....	....	....	....	....
$1\frac{3}{4}$ inches.....	4.10	5.25	5.65	....	....	....	....	....	....	....
2 inches.....	4.20	5.40	5.80	8.50	8.50	12.40	....	....	....	....
$2\frac{1}{4}$ inches.....	4.30	5.55	5.95	8.75	8.75	12.70	....	....	....	....
$2\frac{1}{2}$ inches.....	4.40	5.70	6.10	9.00	9.00	13.00	18.00	....	....	....
$2\frac{3}{4}$ inches.....	4.50	5.85	6.25	9.25	9.25	13.30	18.50	....	....	....
3 inches.....	4.60	6.00	6.40	9.50	9.50	13.60	19.00	27.80	....	....
$3\frac{1}{4}$ inches.....	4.70	6.15	6.55	9.75	9.75	13.90	19.50	28.40	....	....
$3\frac{1}{2}$ inches.....	4.80	6.30	6.70	10.00	10.00	14.20	20.00	29.00	43.50	....
$3\frac{3}{4}$ inches.....	4.90	6.45	6.85	10.25	10.25	14.50	20.50	29.60	44.25	....
4 inches.....	5.00	6.60	7.00	10.50	10.50	14.80	21.00	30.20	45.00	64.00
$4\frac{1}{2}$ inches.....	5.25	6.90	7.30	11.00	11.00	15.40	22.00	31.40	46.50	66.50
5 inches.....	5.75	7.50	7.60	11.50	11.50	16.00	23.00	32.60	48.00	69.00
$5\frac{1}{2}$ inches.....	6.25	8.00	8.00	12.00	12.00	16.60	24.00	33.80	49.50	71.50
6 inches.....	7.00	8.40	8.45	12.50	12.50	17.20	25.00	35.00	51.00	74.00

In ordering Studs, state length of thread wanted on each end, and length of body. State whether the blank part is wanted milled or rough.

Also kind and number of nuts required on each Stud.

Intermediate lengths take next higher list.

Bolt Ends

Fitted With Square Nut

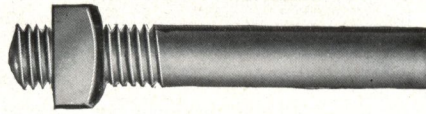


Fig. 4080

Standard List of Bolt Ends

Diameter Inch	Length Inches	Length of Thread Inches	Price Per Pound	Diameter Inches	Length Inches	Length of Thread Inches	Price Per Pound
$\frac{5}{16}$	6	1	.20	$\frac{1}{8}$	13	$4\frac{1}{2}$	.10
$\frac{3}{8}$	7	$1\frac{1}{4}$	.18	$\frac{1}{4}$	14	5	.11
$\frac{7}{16}$	7	$1\frac{1}{2}$	.16	$\frac{3}{8}$	15	$5\frac{1}{2}$	.11
$\frac{1}{2}$	8	$2\frac{1}{2}$	.14	$\frac{1}{2}$	16	6	.11
$\frac{5}{8}$	9	3	.12	$\frac{5}{8}$	17	$6\frac{1}{2}$	.12
$\frac{3}{4}$	10	$3\frac{1}{2}$	.10	$\frac{3}{4}$	18	7	.12
$\frac{7}{8}$	11	$3\frac{1}{2}$	.10	$\frac{7}{8}$	19	$7\frac{1}{2}$	.12
1	12	4	.10	2	20	8	.12

Hexagon nuts, 10 per cent extra.

Bolt ends ordered shorter than above standard lengths, in lots of 100 and over, will be charged at the price per hundred of machine bolts of same length, subject to same discount; in smaller lots, extra. Only the larger sizes enumerated are kept in stock.

Blank Bolts

With Either Square or Round Heads. Finished Points

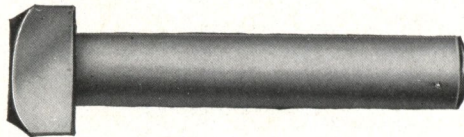


Fig. 4081 Blank Bolt

List Prices Per 100 Pieces

Length Inches	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$ and $\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$
$1\frac{1}{2}$	1.20	1.40	1.60	2.00	2.50	4.00	6.10	7.80	10.40	16.00	21.60
2	1.30	1.52	1.74	2.18	2.74	4.36	6.65	8.50	11.30	17.20	23.10
$2\frac{1}{2}$	1.40	1.64	1.88	2.36	2.98	4.72	7.20	9.20	12.20	18.40	24.60
3	1.50	1.76	2.02	2.54	3.22	5.08	7.75	9.90	13.10	19.60	26.10
$3\frac{1}{2}$	1.60	1.88	2.16	2.72	3.46	5.44	8.30	10.60	14.00	20.80	27.60
4	1.70	2.00	2.30	2.90	3.70	5.80	8.85	11.30	14.90	22.00	29.10
$4\frac{1}{2}$	1.80	2.12	2.44	3.08	3.94	6.16	9.40	12.00	15.80	23.20	30.60
5	1.90	2.24	2.58	3.26	4.18	6.52	9.95	12.70	16.70	24.40	32.10
$5\frac{1}{2}$	2.00	2.36	2.72	3.44	4.42	6.88	10.50	13.40	17.60	25.60	33.60
6	2.10	2.48	2.86	3.62	4.66	7.24	11.05	14.10	18.50	26.80	35.10
$6\frac{1}{2}$	2.20	2.60	3.00	3.80	4.90	7.60	11.60	14.80	19.40	28.00	36.60
7	2.30	2.72	3.14	3.98	5.14	7.96	12.15	15.50	20.30	29.20	38.10
$7\frac{1}{2}$	2.40	2.84	3.28	4.16	5.38	8.32	12.70	16.20	21.20	30.40	39.60
8	2.50	2.96	3.42	4.34	5.62	8.68	13.25	16.90	22.10	31.60	41.10
9	2.70	3.20	3.70	4.70	6.10	9.40	14.35	18.30	23.90	34.00	44.10
10	2.90	3.44	3.98	5.06	6.58	10.12	15.45	19.70	25.70	36.40	47.10
11	3.10	3.68	4.26	5.42	7.06	10.84	16.55	21.10	27.50	38.80	50.10
12	3.30	3.92	4.54	5.78	7.54	11.56	17.65	22.50	29.30	41.20	53.10
13	....	....	4.82	6.14	8.02	12.28	18.75	23.90	31.10	43.60	56.10
14	....	....	5.10	6.50	8.50	13.00	19.85	25.30	32.90	46.00	59.10
15	....	....	5.38	6.86	8.98	13.72	20.95	26.70	34.70	48.40	62.10
16	....	....	5.66	7.22	9.46	14.44	22.05	28.10	36.50	50.80	65.10
17	....	....	....	....	9.94	15.16	23.15	29.50	38.30	53.20	68.10
18	....	....	....	....	10.42	15.88	24.25	30.90	40.10	55.60	71.10
19	....	....	....	....	10.90	16.60	25.35	32.30	41.90	58.00	74.10
20	....	....	....	....	11.38	17.32	26.45	33.70	43.70	60.40	77.10

Blank Bolts with Hexagon Heads, 10 per cent. extra.

Blank Bolts with Tee, Askew, or Eccentric Heads, 20 per cent. extra.

Intermediate lengths take next higher list.

Sink Bolts—Washers

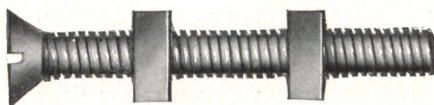


Fig. 4090. Sink Bolt

Sink Bolts With Two Nuts

Length, inches.....	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/2	4
Price, 1/4 inch, per 100.....	1.70	1.80	1.90	2.00	2.10	2.20	2.30	2.40	2.50	2.70	2.90

Washers



Fig. 4091. Wrought Iron

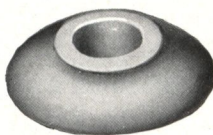


Fig. 4092. Cast Iron



Fig. 4093. Square

Wrought Iron Washers

U. S. Standard Sizes in 200-Pound Kegs

Diameter	Size of Hole	Thickness Wire Gauge No.	Thickness Inch	Size of Bolt	Prices Per Pound	Number in 100 Pounds
9/16	1/4	18	3/64	3/16	14.00	39400
3/4	5/16	16	1/16	1/4	12.20	15600
7/8	3/8	16	1/16	5/16	11.40	11250
1	7/8	14	5/64	3/8	10.50	6800
1 1/4	1 1/2	14	5/64	7/16	9.80	4300
1 3/8	1 5/8	12	3/32	1/2	9.40	2600
1 1/2	1 7/8	12	3/32	9/16	9.30	2250
1 3/4	2	10	1/8	5/8	9.20	1300
2	2 1/8	9	5/32	3/4	9.10	900
2 1/4	2 1/4	8	11/64	7/8	9.00	782
2 1/2	2 1/2	8	11/64	1	9.00	568
2 3/4	2 3/4	8	11/64	1 1/8	9.00	473
3	3	8	11/64	1 1/4	9.20	364
3 1/4	3 1/4	7	3/16	1 3/8	9.20	275
3 1/2	3 1/2	7	3/16	1 1/2	9.20	256
3 3/4	3 3/4	7	3/16	1 5/8	9.50	220
4	4	7	3/16	1 3/4	9.50	197
4 1/4	4 1/4	7	3/16	1 7/8	9.50	174
4 1/2	4 1/2	7	3/16	2	9.50	160
4 3/4	4 3/4	5	7/32	2 1/4	10.50	122
5	5	4	1/4	2 1/2	10.50	106

The above list prices apply only to full keg lots (200 pounds) of a size. For less than 200 pounds of a size or for special packing, the following extras will be charged, viz.:

- At the rate of .10 per 100 pounds for 100 pounds or more.
- At the rate of .50 per 100 pounds for less than 100 pounds.
- At the rate of .10 per 100 pounds for packing in 100-pound kegs.
- At the rate of .20 per 100 pounds for packing in 50 to 100-pound boxes.
- At the rate of .30 per 100 pounds for packing in 25 to 50-pound boxes.
- At the rate of .50 per 100 pounds for packing in 5-pound boxes.
- At the rate of 1.00 per 100 pounds for packing in 1-pound boxes.

Cast Iron Washers

Diameter Inches	Hole Inches	Thickness Inches	Size of Bolt Inches	Weight Pounds
2 1/2	5/8	11/16	1 1/2	1 1/2
2 3/4	3/4	3/4	5/8	5/8
3	7/8	13/16	3/4	3/4
3 1/2	1	7/8	7/8	1 1/4
4	1 1/8	1 1/16	1	1 5/8
4 1/2	1 1/4	1	1 1/8	2 1/4
5	1 3/8	1 1/8	1 1/4	3
6	1 3/4	1 1/4	1 1/2	5

Square Washers

Width Inches	Thickness Inch	Size Hole Inches	Diam. Bolt Inches
1 1/2	1/8	7/16	3/8
1 3/4	1/8	1/2	1/2
2	3/16	9/16	5/8
2 1/4	1/4	1 1/8	3/4
2 1/2	1/4	1 1/4	7/8
3	1/4	1 3/4	1
3 1/2	3/8	1 3/2	1 1/8
4	3/8	1 3/4	1 1/4
4 1/2	3/8	1 3/8	1 3/8
5	3/8	1 1/2	1 3/8
6	3/8	1 5/8	1 1/2

Cast Iron Washers and Square Washers quoted on specifications or furnished at market prices.

Square and Hexagon Nuts

Cold Punched, Chamfered and Trimmed with Reamed Holes

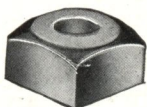


Fig. 4100. Square

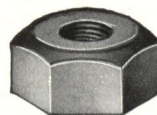


Fig. 4101. Hexagon

U. S. Standard List

Adopted January 1, 1906

Width Inches	Thickness Inches	Hole Inches	Size of Bolt Inches	Square Price in 200-Pound Kegs Cents Per Pound		Hexagon Price in 200-Pound Kegs Cents Per Pound		Square Average Number in One Keg		Hexagon Average Number in One Keg	
				Blank	Tapped	Blank	Tapped	Blank	Tapped	Blank	Tapped
$\frac{1}{2}$	$\frac{1}{4}$	$\frac{3}{16}$	$\frac{1}{4}$	20.0	22.0	27.0	29.5	12600	13500	13800	14750
$\frac{19}{32}$	$\frac{5}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	18.0	19.5	24.0	26.0	7600	8150	8933	9560
$\frac{11}{16}$	$\frac{3}{8}$	$\frac{19}{64}$	$\frac{3}{8}$	14.5	15.6	18.5	20.1	4600	4900	5500	5880
$\frac{25}{32}$	$\frac{7}{16}$	$\frac{11}{32}$	$\frac{7}{16}$	14.0	14.9	18.0	19.3	3000	3200	3760	3990
$\frac{7}{8}$	$\frac{1}{2}$	$\frac{13}{32}$	$\frac{1}{2}$	11.3	12.0	14.0	15.0	2320	2450	2650	2800
$\frac{31}{32}$	$\frac{9}{16}$	$\frac{29}{64}$	$\frac{9}{16}$	11.3	11.9	14.0	14.9	1660	1750	1993	2110
$1\frac{1}{16}$	$\frac{5}{8}$	$\frac{33}{64}$	$\frac{5}{8}$	10.0	10.5	12.5	13.2	1200	1270	1440	1525
$1\frac{1}{4}$	$\frac{3}{4}$	$\frac{5}{8}$	$\frac{3}{4}$	9.7	10.1	11.4	12.0	740	780	896	950
$1\frac{7}{16}$	$\frac{7}{8}$	$\frac{47}{64}$	$\frac{7}{8}$	9.6	10.0	11.1	11.7	480	500	567	600
$1\frac{5}{8}$	1	$\frac{27}{32}$	1	9.6	10.0	11.1	11.7	344	365	408	435
$1\frac{13}{16}$	$1\frac{1}{8}$	$\frac{15}{16}$	$1\frac{1}{8}$	9.6	10.0	11.1	11.7	244	260	296	313
2	$1\frac{1}{4}$	$1\frac{1}{16}$	$1\frac{1}{4}$	10.1	10.5	11.5	12.1	180	192	208	220
$2\frac{3}{16}$	$1\frac{3}{8}$	$1\frac{3}{32}$	$1\frac{3}{8}$	10.3	10.8	12.0	12.7	150	160	164	175
$2\frac{3}{8}$	$1\frac{1}{2}$	$1\frac{3}{32}$	$1\frac{1}{2}$	10.7	11.3	12.6	13.4	112	120	132	140
$2\frac{9}{16}$	$1\frac{5}{8}$	$1\frac{13}{32}$	$1\frac{5}{8}$	11.1	11.8	13.2	14.1	96	100	108	115
$2\frac{3}{4}$	$1\frac{3}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	11.5	12.2	14.0	14.9	72	77	88	93
$2\frac{15}{16}$	$1\frac{7}{8}$	$1\frac{5}{8}$	$1\frac{7}{8}$	12.0	12.8	14.5	15.5	56	59	71	75
$3\frac{1}{8}$	2	$1\frac{23}{32}$	2	12.0	12.9	14.5	15.6	48	50	60	64
$3\frac{5}{16}$	$2\frac{1}{8}$	$1\frac{13}{16}$	$2\frac{1}{8}$	12.5	13.5	15.0	16.2	40	42	52	55
$3\frac{1}{2}$	$2\frac{1}{4}$	$1\frac{15}{16}$	$2\frac{1}{4}$	12.5	13.6	15.0	16.3	32	33	46	48
$3\frac{11}{16}$	$2\frac{3}{8}$	$2\frac{1}{16}$	$2\frac{3}{8}$	13.5	14.7	16.0	17.4	30	31	38	40
$3\frac{7}{8}$	$2\frac{1}{2}$	$2\frac{3}{16}$	$2\frac{1}{2}$	13.5	14.8	16.0	17.5	27	28	31	32
$4\frac{1}{16}$	$2\frac{5}{8}$	$2\frac{5}{16}$	$2\frac{5}{8}$	14.0	15.4	16.5	18.1	20	21	28	29
$4\frac{1}{4}$	$2\frac{3}{4}$	$2\frac{7}{16}$	$2\frac{3}{4}$	14.0	15.4	16.5	18.1	17	18	26	27
$4\frac{5}{8}$	3	$2\frac{5}{8}$	3	14.5	16.0	17.0	18.7	14	15	17	18
5	$3\frac{1}{4}$	$2\frac{15}{16}$	$3\frac{1}{4}$	14.5	16.1	17.0	18.8	13	14	14	14
$5\frac{3}{8}$	$3\frac{1}{2}$	$3\frac{3}{32}$	$3\frac{1}{2}$	14.5	16.2	17.0	18.9	9	10	11	11
$6\frac{1}{8}$	4	$3\frac{9}{16}$	4	15.5	17.5	18.0	20.0	5	5	8	8

For less than keg lots (200 pounds) of a size, add 20 cents per cwt. for 100 pounds or over. 50 cents per cwt. for less than 100 pounds.

U. S. Standard

Hot Pressed Nuts

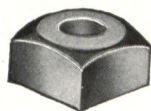


Fig. 4110. Square

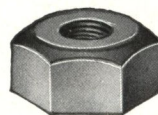


Fig. 4111. Hexagon

Standard List

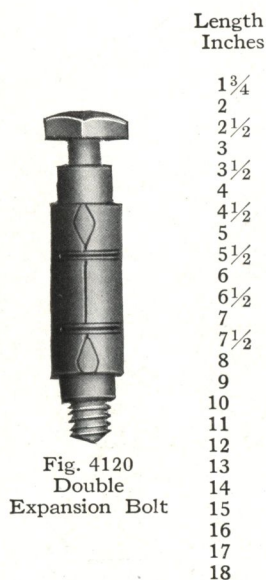
Adopted January 1, 1906

Width Inches	Thickness Inches	Hole Inches	Size of Bolt Inches	Square Price in 200-Pound Kegs Cents Per Pound		Hexagon Price in 200-Pound Kegs Cents Per Pound		Square Average Number in One Keg		Hexagon Average Number in One Keg	
				Blank	Tapped	Blank	Tapped	Blank	Tapped	Blank	Tapped
$\frac{1}{2}$	$\frac{1}{4}$	$\frac{3}{16}$	$\frac{1}{4}$	13.0	15.0	20.0	22.5	13800	14760	17400	18600
$\frac{3}{32}$	$\frac{5}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	12.0	13.5	18.0	20.0	7400	7915	9200	9760
$\frac{1}{16}$	$\frac{3}{8}$	$\frac{13}{64}$	$\frac{3}{8}$	10.5	11.6	14.0	15.6	5000	5320	6000	6400
$\frac{3}{32}$	$\frac{7}{16}$	$\frac{11}{32}$	$\frac{7}{16}$	10.0	10.9	13.0	14.3	3200	3400	4000	4250
$\frac{7}{8}$	$\frac{1}{2}$	$\frac{13}{32}$	$\frac{1}{2}$	9.0	9.7	11.2	12.2	2400	2540	3000	3200
$\frac{3}{32}$	$\frac{9}{16}$	$\frac{29}{64}$	$\frac{9}{16}$	9.0	9.6	11.2	12.1	1600	1690	2128	2275
$1\frac{1}{16}$	$\frac{5}{8}$	$\frac{33}{64}$	$\frac{5}{8}$	8.7	9.2	10.5	11.2	1360	1440	1540	1630
$1\frac{1}{4}$	$\frac{3}{4}$	$\frac{5}{8}$	$\frac{3}{4}$	8.5	8.9	10.0	10.6	832	880	998	1050
$1\frac{7}{16}$	$\frac{7}{8}$	$\frac{47}{64}$	$\frac{7}{8}$	8.4	8.8	9.9	10.5	544	578	628	665
$1\frac{5}{8}$	1	$\frac{27}{32}$	1	8.4	8.8	9.9	10.5	376	397	436	460
$1\frac{11}{16}$	$1\frac{1}{8}$	$\frac{15}{16}$	$1\frac{1}{8}$	8.4	8.8	9.9	10.5	268	284	288	305
2	$1\frac{1}{4}$	$1\frac{1}{16}$	$1\frac{1}{4}$	8.4	8.8	9.9	10.5	206	220	250	260
$2\frac{3}{16}$	$1\frac{3}{8}$	$1\frac{5}{32}$	$1\frac{3}{8}$	8.5	9.0	10.0	10.7	146	157	182	190
$2\frac{3}{8}$	$1\frac{1}{2}$	$1\frac{9}{32}$	$1\frac{1}{2}$	8.8	9.4	10.3	11.1	120	127	144	150
$2\frac{9}{16}$	$1\frac{5}{8}$	$1\frac{13}{16}$	$1\frac{5}{8}$	9.0	9.7	10.5	11.4	95	100	116	120
$2\frac{3}{4}$	$1\frac{3}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	9.2	10.0	10.8	11.7	74	77	95	100
$2\frac{11}{16}$	$1\frac{7}{8}$	$1\frac{5}{8}$	$1\frac{7}{8}$	9.5	10.3	11.0	12.0	64	67	80	84
$3\frac{1}{8}$	2	$1\frac{23}{32}$	2	9.7	10.6	11.2	12.3	53	56	62	65
$3\frac{5}{16}$	$2\frac{1}{8}$	$1\frac{13}{16}$	$2\frac{1}{8}$	10.0	11.0	11.7	12.9	43	45	52	54
$3\frac{1}{2}$	$2\frac{1}{4}$	$1\frac{15}{16}$	$2\frac{1}{4}$	10.0	11.1	11.7	13.0	36	37	44	46
$3\frac{11}{16}$	$2\frac{3}{8}$	$2\frac{1}{16}$	$2\frac{3}{8}$	10.3	11.5	12.2	13.6	28	29	35	36
$3\frac{7}{8}$	$2\frac{1}{2}$	$2\frac{11}{64}$	$2\frac{1}{2}$	10.5	11.8	12.4	13.9	24	25	32	33
$4\frac{1}{4}$	$2\frac{3}{4}$	$2\frac{27}{64}$	$2\frac{3}{4}$	11.0	12.4	13.0	14.6	21	22	27	27
$4\frac{5}{8}$	3	$2\frac{5}{8}$	3	11.5	13.0	13.5	15.2	16	17	18	18

When ordering, please state whether nuts are to be blank or tapped. For quantities less than 200 pounds of a size, the following extras will be charged: At the rate of 20 cents per 100 pounds for 100 pounds or more. At the rate of 50 cents per 100 pounds for less than 100 pounds.

Double Expansion Bolts—Machine Bolt Type

List Prices Per 100, With Square Head



Length Inches	Diameter of Bolt											
	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{1}{2}$
$1\frac{3}{4}$												
2												
$2\frac{1}{2}$												
3												
$3\frac{1}{2}$												
4												
$4\frac{1}{2}$												
5												
$5\frac{1}{2}$												
6												
$6\frac{1}{2}$												
7												
$7\frac{1}{2}$												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												

The enormous advance in the price of Machine Bolts has made it impossible to continue a standard price list for Bolts complete with Double Expansion Shields.

This list has therefore been withdrawn and Bolts will hereafter be furnished at market prices, and Shields charged extra at list prices below, subject to discount ruling. See page 406 for Machine Bolt List.

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This list has therefore been withdrawn and Bolts will hereafter be furnished at market prices, and Shields charged extra at list prices below, subject to discount ruling. See page 406 for Machine Bolt List.

Double Expansion Shields for Machine Bolts

List Prices Per 100, for Shields Only

Diameter of Bolt, inch	1/4	5/16	3/8	7/16	1/2	5/8
Price per 100	9.00	11.00	13.00	16.00	18.00	24.00
Length of Shield, inches	1 1/2	1 7/8	2 3/8	2 1/2	2 5/8	3 1/4
Size Hole to Receive Expansion, inches	9/16	5/8	3/4	1	1	1 1/8
Diameter of Drill Required, inches	9/16	5/8	3/4	1	1	1 1/8

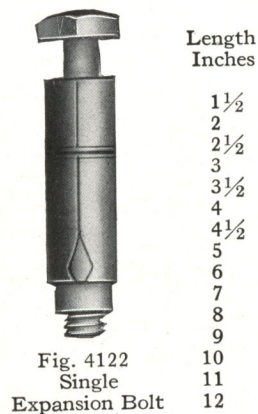
Diameter of Bolt, inches	3/4	7/8	1	1 1/8	1 1/4	1 1/2
Price per 100	36.00	60.00	65.00	140.00	150.00	220.00
Length of Shield, inches	4	4 3/4	5	6 1/4	6 1/4	7 1/2
Size Hole to Receive Expansion, inches	1 3/8	1 5/8	1 3/4	2 1/8	2 1/8	2 1/2
Diameter of Drill Required, inches	1 3/8	1 5/8	1 3/4	2 1/8	2 1/8	2 1/2



Fig. 4121
Double
Expansion Shield

Single Expansion Bolts—Machine Bolt Type

List Prices Per 100, With Square Head



Length Inches	Diameter of Bolt									
	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	
1 1/2										
2										
2 1/2										
3										
3 1/2										
4										
4 1/2										
5										
6										
7										
8										
9										
10										
11										
12										

The enormous advance in the price of Machine Bolts has made it impossible to continue a standard price list for Bolts complete with Single Expansion Shields.

This list has therefore been withdrawn and Bolts will hereafter be furnished at market prices, and Shields charged extra at list prices below, subject to discount ruling.

See page 406 for Machine Bolt List.

Single Expansion Shields for Machine Bolts

List Prices Per 100, for Shields Only

Diameter of Bolt, inch	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1
Price per 100	7.50	8.50	10.50	14.00	16.00	21.00	29.00	36.00	44.00
Length of Shield, inches	1	1 1/2	1 3/4	1 3/4	1 3/4	2	3	3 3/4	3 3/4
Size Hole to Receive Expansion	9/16	5/8	3/4	1	1	1 1/8	1 3/8	1 3/8	1 3/4

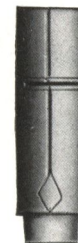


Fig. 4123
Single
Expansion Shield

Fig. 4130
Lag Screw
Type

Expansion Bolts—Lag Screw Type

Malleable Shields

List Price Per 100 Complete With Square Head Lag Screws

Length Inches	Diameter of Lag Screw										
	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{4}$
1½											
2											
2½											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											

Market conditions having rendered it impossible to maintain a standard list for Lag Screws complete with Expansion Shields, this list has been withdrawn.

Lag Screws will hereafter be furnished at market prices and Expansion Shields charged extra at list below, subject to discount ruling.

See page 414 for Lag Screw Lists.



Market conditions having rendered it impossible to maintain a standard list for Lag Screws complete with Expansion Shields, this list has been withdrawn.

Lag Screws will hereafter be furnished at market prices and Expansion Shields charged extra at list below, subject to discount ruling.

See page 414 for Lag Screw Lists.

Malleable Iron Shields Without Bolts

List Price Per 100—For Shields Only

	Diameter of Lag Screw										
	$\frac{1}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{4}$
Price.....	8.40	9.40	10.50	13.35	17.75	22.00	27.80	39.95	53.30	66.60	100.00
Length of Shield } inches.....	....	$1\frac{1}{2}$	2	$2\frac{3}{4}$	3	$3\frac{1}{2}$	$3\frac{1}{2}$	$3\frac{1}{2}$	5	5	8
Long Standard.....											
Short Standard, inches.....	1	1	$1\frac{1}{2}$	2	2	2	2	2	....	....	....
Extra Short Standard, inches...			1	$1\frac{1}{2}$	....	$1\frac{1}{2}$	$1\frac{1}{2}$	....	....	....	....
Outside Diameter of Shield and Drill, inches.....	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{11}{16}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{7}{8}$

Fig. 4131
Malleable
Shield

Screw Anchors—With Screws

One-Part Shields or Screw Anchors Fitted Complete with Iron Wood Screws

Prices Per 100

Diameter of Anchor	Length of Anchor	Fits Screw Numbers	Length of Screws								
			$\frac{3}{4}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	5
$\frac{1}{8}$	$\frac{1}{2}, \frac{5}{8}, \frac{3}{4}, 1$	5, 6, 7, 8	4.60	4.65	4.70	.....	.....	.....	.....	.....	.....
$\frac{1}{16}$	$\frac{1}{2}, \frac{3}{4}, 1$	9, 10, 11, 12	5.25	5.30	5.35	5.40	.....	.....	.....	.....	.....
$\frac{3}{16}$	$1\frac{1}{8}$	9, 10, 11, 22	.....	.....	.....	6.65	6.85	6.95	7.45	7.75	8.40
$\frac{1}{4}$	$\frac{1}{2}, \frac{3}{4}, 1$	13, 14, 15	5.90	5.95	6.05	6.10	.....	.....	.....	.....	.....
$\frac{3}{8}$	$1\frac{1}{2}$	13, 14, 15	.....	.....	.....	7.30	7.40	7.50	7.75	8.45	9.25
$\frac{1}{2}$	2	13, 14, 15	.....	.....	.....	.....	8.65	8.85	9.20	9.55	10.35
$\frac{5}{8}$	$\frac{3}{4}, 1$	16, 17, 18	.....	6.85	7.10	7.20	7.30	.....	.....	.....	.....
$\frac{1}{16}$	$1\frac{1}{2}$	16, 17, 18	.....	.....	.....	8.75	8.85	9.10	9.30	9.70	10.70
$\frac{3}{16}$	2	16, 17, 18	.....	.....	.....	.....	10.10	10.35	10.50	10.95	11.95
$\frac{1}{4}$	2	20, 22, 24	.....	.....	.....	.....	12.65	13.05	13.45	13.75	14.85
$\frac{3}{8}$	2	26, 28, 30	.....	.....	.....	.....	16.30	16.70	17.10	17.50	17.90
$\frac{1}{2}$	2	Lag Screw	.....	.....	.....	.....	20.00	20.40	20.80	21.20	21.60
$\frac{5}{8}$	$3\frac{1}{2}$	Lag Screw	.....	.....	.....	.....	.....	.....	23.80	24.20	24.60

Note that price is based both upon the length of anchor and length of screw.

Anchor Fitted Complete With Round, Flat or Oval Head—Brass Wood Screws

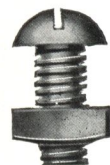
Diameter of Anchor	Length of Anchor	Fit Screw Numbers	Length of Screw						
			$\frac{3}{4}$	1	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
$\frac{1}{8}$	$\frac{1}{2}, \frac{5}{8}, \frac{3}{4}, 1$	5, 6, 7, 8	6.10	6.20	7.50	9.50	13.35	.....	.....
$\frac{1}{16}$	$\frac{1}{2}, \frac{3}{4}, 1$	9, 10, 11, 12	7.90	8.50	9.50	11.00	14.35	.....	.....
$\frac{3}{16}$	$1\frac{1}{8}$	9, 10, 11, 12	.....	.....	.....	12.25	15.60	19.75	21.85
$\frac{1}{4}$	$\frac{1}{2}, \frac{3}{4}, 1$	13, 14, 15	9.60	10.50	12.10	13.90	16.10	.....	.....
$\frac{3}{8}$	$1\frac{1}{2}$	13, 14, 15	.....	.....	.....	15.00	17.25	20.65	22.85
$\frac{1}{2}$	1	13, 14, 15	.....	.....	.....	16.10	18.35	21.75	23.85
$\frac{5}{8}$	$\frac{3}{4}, 1$	16, 17, 18	12.25	13.50	16.85	19.85	22.75	.....	.....
$\frac{3}{16}$	$1\frac{1}{2}$	16, 17, 18	.....	.....	.....	21.00	24.00	26.90	26.65
$\frac{1}{4}$	2	16, 17, 18	.....	.....	.....	22.25	25.25	28.20	30.90
$\frac{3}{8}$	1	20, 22, 24	.....	.....	.....	28.65	33.10	38.60	43.10
$\frac{1}{2}$	2	20, 22, 24	.....	.....	.....	30.90	35.35	40.85	45.35

Fig. 4132
Wood ScrewFig. 4133
Screw Shield
or Anchor

Flat and Round Head Stove Bolts

Price Per 100

Length Inches	Diameter				Length Inches	Diameter			
	$\frac{1}{8}$ — $\frac{3}{8}$ — $\frac{1}{2}$	$\frac{3}{4}$ — $\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{8}$		$\frac{1}{8}$ — $\frac{3}{8}$ — $\frac{1}{2}$	$\frac{3}{4}$ — $\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{8}$
$\frac{3}{8}$	.85	1.20	1.75	2.65	3	1.50	2.00	2.70	4.20
$\frac{1}{2}$	.85	1.20	1.75	2.65	$3\frac{1}{4}$	1.60	2.10	2.85	4.40
$\frac{5}{8}$	.85	1.20	1.75	2.65	$3\frac{1}{2}$	1.70	2.20	3.00	4.60
$\frac{3}{4}$	.85	1.20	1.75	2.65	$3\frac{3}{4}$	1.80	2.30	3.15	4.80
$\frac{7}{8}$	.90	1.25	1.80	2.70	4	1.90	2.40	3.30	5.00
1	.90	1.30	1.85	2.75	$4\frac{1}{4}$	2.00	2.50	3.45	5.20
$1\frac{1}{8}$	.95	1.35	1.90	2.85	$4\frac{1}{2}$	2.10	2.60	3.60	5.40
$1\frac{1}{4}$	1.00	1.40	1.95	2.90	$4\frac{3}{4}$	2.20	2.70	3.75	5.60
$1\frac{3}{8}$	1.05	1.45	2.00	3.00	5	2.30	2.85	3.90	5.80
$1\frac{1}{2}$	1.10	1.50	2.05	3.10	$5\frac{1}{4}$	2.40	3.00	4.10	6.00
$1\frac{3}{4}$	1.15	1.55	2.15	3.20	$5\frac{1}{2}$	2.50	3.15	4.30	6.20
2	1.20	1.60	2.30	3.40	$5\frac{3}{4}$	2.60	3.30	4.50	6.40
$2\frac{1}{4}$	1.25	1.70	2.40	3.60	6	2.75	3.45	4.70	6.60
$2\frac{1}{2}$	1.30	1.80	2.50	3.80	$6\frac{1}{4}$	2.90	3.60	4.90	6.80
$2\frac{3}{4}$	1.40	1.90	2.60	4.00	$6\frac{1}{2}$	3.05	3.75	5.10	7.00

Fig. 4140
Flat HeadFig. 4141
Round Head

Toggle Bolts—Price Per 100

Threaded rod is firmly riveted to the toggle head and by actual test a $\frac{1}{4}$ toggle sustained a load of 900 pounds. Note the stay washer which holds the toggle firmly in position while attaching material. Especially designed for making fastenings to hollow tile, etc.



Fig. 4142. Toggle Bolt

Length Screw Inches	Diameter of Screw					
	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1
3	6.00	7.50	8.50	12.25	14.75	26.00
$3\frac{1}{2}$	6.25	8.00	9.00	13.00	15.00	27.00
4	6.75	8.50	9.50	14.00	15.50	28.00
5	7.50	9.25	10.25	15.00	17.00	29.00
6	8.00	10.00	11.00	15.50	17.50	30.00

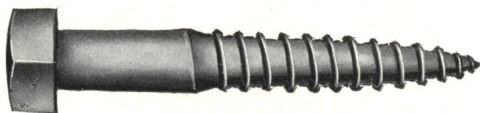


Fig. 4143. Gimlet Point Coach Screw

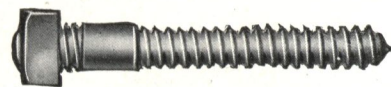


Fig. 4144. Hanger Screw

Coach and Lag Screws—Price Per 100

Length Under Head Inches	Diameter						
	$\frac{1}{8}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	1	1
$1\frac{1}{2}$	2.25	2.70	3.15	3.75	4.11	6.00	.....
2	2.45	2.96	3.47	4.11	4.47	6.50	.....
$2\frac{1}{2}$	2.65	3.22	3.79	4.47	4.83	7.00	.....
3	2.85	3.48	4.11	4.83	5.19	7.50	.....
$3\frac{1}{2}$	3.05	3.74	4.43	5.19	5.55	8.00	.....
4	3.25	4.00	4.75	5.55	5.91	8.50	.....
$4\frac{1}{2}$	3.45	4.26	5.07	5.91	6.27	9.00	.....
5	3.65	4.52	5.39	6.27	6.63	9.50	.....
$5\frac{1}{2}$	3.85	4.78	5.71	6.63	6.99	10.00	.....
6	4.05	5.04	6.03	6.99	7.35	10.50	.....
$6\frac{1}{2}$	.....	.....	6.35	7.35	7.71	11.00	.....
7	.....	.....	6.67	7.71	8.07	11.50	.....
$7\frac{1}{2}$	.....	.....	6.99	8.07	8.43	12.00	.....
8	.....	.....	7.31	8.43	9.15	13.00	.....
9	.....	.....	7.95	9.15	9.87	14.00	.....
10	.....	.....	.....	9.87	10.59	15.00	.....
11	.....	.....	.....	10.59	11.31	16.00	.....
12	.....	.....	.....	11.31	.....	.....	.....

Hexagon Heads, 10 per cent. extra. Intermediate lengths take next higher list.

Hanger Screws With Gimlet Point—Price Per 100

Length Inches	Diameter					
	$\frac{1}{4}$, $\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	1	1
2	3.00	3.60	4.24	5.06	6.19	.....
$2\frac{1}{2}$	3.19	3.83	4.54	5.44	6.75	.....
3	3.38	4.05	4.84	5.81	7.31	.....
$3\frac{1}{2}$	3.57	4.28	5.14	6.19	7.88	.....
4	3.75	4.50	5.44	6.56	8.44	.....
$4\frac{1}{2}$	3.94	4.73	5.74	6.94	9.00	.....
5	4.13	4.95	6.04	7.31	9.56	.....
$5\frac{1}{2}$	4.32	5.18	6.34	7.69	10.13	.....
6	4.50	5.40	6.64	8.06	10.69	.....
$6\frac{1}{2}$	.....	5.62	6.94	8.43	11.25	.....
7	.....	5.84	7.24	8.80	11.82	.....
$7\frac{1}{2}$	.....	6.06	7.54	9.17	12.38	.....
8	.....	6.28	7.84	9.55	12.95	.....
9	.....	.....	8.14	9.92	13.51	.....
10	.....	.....	.....	10.30	14.08	.....
11	.....	.....	.....	.....	14.64	.....
12	.....	.....	.....	.....	15.21	.....

Hexagon Nuts, 10 per cent. extra. Intermediate lengths take next higher list.

Steel Wood Screws



Fig. 4150. Flat Head



Fig. 4151. Round Head

Steel Wood Screws—Price Per Gross

Inches	Number																					
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	20	22	
$\frac{1}{4}$	.72	.72	.72	.72	.72																	
$\frac{3}{8}$	.72	.72	.72	.72	.72	.75	.78	.82	.88	.94												
$\frac{1}{2}$						.84	.90	.96	1.05	1.10	1.20											
$\frac{5}{8}$		.72	.72	.72	.75	.78	.80	.86	.92	.98	1.07	1.12	1.20	1.25	1.30							
$\frac{3}{4}$		.72	.72	.72	.75	.78	.82	.86	.92	1.00	1.10	1.15	1.25	1.35	1.50	1.65	1.80					
$\frac{7}{8}$			.72	.75	.78	.82	.85	.90	.95													
			.74	.78	.82	.85	.90	.94	1.00	1.05	1.15	1.25	1.35	1.45	1.55	1.75	2.00					
1				.80	.84	.87	.92	.98	1.05	1.10	1.20	1.30	1.40	1.60	1.70	2.00	2.50	2.70	2.80	3.50		
$1\frac{1}{4}$				.88	.92	.98	1.05	1.10	1.15	1.20	1.30	1.40	1.55	1.70	1.90	2.15	2.50	2.75	3.30	4.00	4.80	
$1\frac{1}{2}$				.98	1.05	1.10	1.15	1.20	1.30	1.35	1.40	1.50	1.65	1.80	2.05	2.35	2.80	3.20	3.80	4.30	5.10	
$1\frac{3}{4}$						1.30	1.35	1.45	1.50	1.55	1.60	1.70	1.80	2.00	2.25	2.60	2.90	3.50	4.00	4.50	5.20	
2						1.45	1.50	1.55	1.60	1.65	1.75	1.85	2.00	2.20	2.45	2.65	3.10	3.70	4.20	4.80	5.50	
$2\frac{1}{4}$						1.55	1.60	1.65	1.75	1.85	1.95	2.05	2.20	2.35	2.65	3.10	3.50	3.85	4.55	5.30	6.10	
$2\frac{1}{2}$						1.90	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.90	3.30	3.65	4.20	4.70	5.80	6.70	
$2\frac{3}{4}$							2.40	2.60	2.70	2.80	2.90	3.00	3.10	3.20	3.30	3.60	3.90	4.50	5.00	6.10	7.20	
3							2.95	3.00	3.05	3.10	3.15	3.20	3.30	3.40	3.50	3.80	4.20	4.80	5.50	6.50	7.50	
$3\frac{1}{2}$									3.90	4.00	4.10	4.20	4.30	4.40	4.50	4.75	4.95	5.40	6.15	7.30	8.70	
4									4.90	5.10	5.20	5.30	5.40	5.60	5.90	6.20	6.50	7.00	7.60	8.60	9.70	
$4\frac{1}{2}$													7.00	7.20	7.60	7.85	8.15	8.60	9.15	9.85	11.20	
5													8.10	8.30	8.60	9.10	9.70	10.10	11.00	11.50	13.00	
6													10.00	10.30	11.00	11.60	12.40	13.00	14.50	16.00	18.00	

Brass Wood Screws furnished at market prices.

Cap Screws—Flat and Button Heads

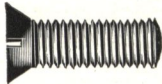


Fig. 4152. Flat Head



Fig. 4153. Button Head

Flat Head Cap Screws—Per 100

		1/4	3/8	1/2	5/8	3/4	13/16	7/8	1	1 1/8	1 3/8
Diameter of Head.....		1/8	3/16	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4
Diameter of Screw.....		1/8	3/16	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4
Length Over All	3/4	2.25	2.50	3.10	4.00	5.00	6.60	9.00	12.00	14.50	19.20
	1	2.50	2.75	3.35	4.25	5.30	6.90	9.00	12.00	14.50	19.20
	1 1/4	2.75	3.00	3.60	4.50	5.60	7.20	9.50	12.00	14.50	19.20
	1 1/2	3.00	3.25	3.85	4.75	5.90	7.50	10.00	12.50	14.50	19.20
	1 3/4	3.25	3.50	4.10	5.00	6.20	7.50	10.00	12.50	14.50	19.20
	2	3.75	4.35	5.50	6.75	8.00	10.00	12.50	14.50	16.75	21.25
	2 1/4	4.75	6.00	7.25	8.50	11.00	13.75	16.00	17.50	20.00	22.40
	2 1/2	6.50	7.75	9.00	10.25	12.00	14.50	16.75	17.50	20.00	22.40
	2 3/4	7.00	8.25	9.50	10.75	12.50	14.50	16.75	17.50	20.00	22.40
	3	8.75	10.00	11.25	12.50	14.50	16.75	17.50	20.00	22.40	23.60
	Threads, per inch.....	40	24	20	18	16	14	12	12	11	10
	Add for each 1/4 inch.....	.25	.25	.40	.50	.50	.50	.50	.75	1.00	1.25

Button Head Cap Screws—Per 100

		7/32	5/16	7/16	9/16	5/8	3/4	13/16	15/16	1	1 1/4
Diameter of Head.....		1/8	3/16	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4
Diameter of Screw.....		1/8	3/16	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4
Length Under Head to Extreme Point	3/4	2.25	2.50	3.00	3.50	4.00	5.00	6.60	9.00	12.00	19.20
	1	2.50	2.75	3.25	3.75	4.25	5.30	6.90	9.00	12.00	19.20
	1 1/4	2.75	3.00	3.50	4.00	4.50	5.60	7.20	9.50	12.00	19.20
	1 1/2	3.00	3.25	3.75	4.25	4.75	5.90	7.50	10.00	12.50	19.20
	1 3/4	3.25	3.50	4.00	4.50	5.00	6.20	7.50	10.00	12.50	19.20
	2	3.75	4.35	5.00	5.50	6.00	7.20	8.50	10.75	13.00	19.20
	2 1/4	4.75	5.50	6.00	6.50	7.00	8.50	10.00	12.00	14.50	21.25
	2 1/2	6.00	6.50	7.00	7.50	8.00	9.50	11.00	12.50	14.50	21.25
	2 3/4	7.00	7.50	8.00	8.50	9.00	10.50	12.00	13.50	15.00	22.40
	3	8.75	9.00	9.50	10.00	10.50	12.00	13.50	15.00	16.00	23.60
	Threads per inch.....	40	24	20	18	16	14	12	12	11	10
	Add for each 1/4 inch.....	.25	.25	.40	.50	.50	.50	.50	.75	.75	1.15

Square and Hexagon Head Cap Screws



Fig. 4160. Square

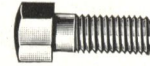


Fig. 4161. Hexagon

Square and Hexagon Head Cap Screws—Per 100

Diameter of Head, Square.	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{11}{16}$	$\frac{3}{4}$	$\frac{7}{8}$	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$
Diameter of Head.....	$\frac{1}{16}$	$\frac{1}{8}$	$\frac{1}{16}$	$\frac{3}{16}$	$\frac{1}{2}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$
Length of Head.....	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$
Diameter of Screw.....	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$
Length under Head to Extreme Point	$\frac{3}{4}$	3.00	3.25	3.75	4.50	5.70	.....	.....	.....	.....	.....	.....
	1	3.15	3.40	3.90	4.70	5.80	.....	.....	.....	.....	.....	.....
	$1\frac{1}{4}$	3.25	3.50	4.00	4.90	5.90	9.25	9.25	.....	.....	.....	.....
	$1\frac{1}{2}$	3.50	3.75	4.25	5.30	6.50	9.50	9.50	12.50	.....	.....	.....
	$1\frac{3}{4}$	3.75	4.00	4.50	5.70	7.10	10.00	10.00	13.50	18.40	.....	.....
	2	4.00	4.25	4.85	6.10	7.70	10.75	10.75	14.50	19.70	22.75	.....
	$2\frac{1}{4}$	4.25	4.85	5.20	6.50	8.30	11.50	11.50	15.50	21.00	25.00	34.00
	$2\frac{1}{2}$	4.70	5.35	5.55	7.15	8.90	12.60	12.60	16.50	22.40	27.25	36.75
	$2\frac{3}{4}$	5.25	5.80	6.00	7.50	9.50	13.60	13.60	17.50	23.70	29.50	39.50
	3	5.75	6.30	6.65	7.90	10.10	14.40	14.40	19.00	25.00	31.75	42.25
	$3\frac{1}{4}$	6.25	6.80	7.20	8.40	10.70	15.20	15.20	20.60	26.40	34.00	.....
	$3\frac{1}{2}$.....	.....	.....	.....	9.15	11.50	16.00	16.00	22.10	28.20	36.25	.....
	$3\frac{3}{4}$.....	.....	.....	.....	9.75	12.30	17.30	17.30	23.70	30.00	38.50	.....
	4.....	.....	.....	.....	10.50	13.10	18.60	18.60	25.30	31.80	40.75	.....
	$4\frac{1}{4}$.....	.....	.....	.....	11.10	13.90	19.90	19.90	26.90	33.60	43.00	.....
	$4\frac{1}{2}$.....	.....	.....	.....	.....	.....	.....	21.20	28.50	35.90	45.25	.....
	$4\frac{3}{4}$.....	.....	.....	.....	.....	.....	.....	22.50	30.10	37.20	47.50	.....
	5.....	.....	.....	.....	.....	.....	.....	31.70	39.00	49.75	.....	77.00
	$5\frac{1}{4}$.....	.....	.....	.....	.....	.....	.....	.....	40.80	52.00	.....	80.50
Threads per Inch.....	20	18	16	14	12	12	11	10	9	8	7	7
Add for each $\frac{1}{4}$ inch.....	.40	.50	.60	.70	.80	1.30	1.30	1.60	1.80	2.25	2.75	3.50

Round and Fillister Head Cap Screws

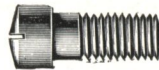


Fig. 4162

Round and Fillister Head Cap Screws—Per 100

Diameter of Head.....	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{3}{4}$	$1\frac{1}{8}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$
Diameter of Screw.....	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{13}{16}$	$\frac{7}{8}$	$\frac{1}{4}$	$\frac{7}{8}$	1
Length under Head to Extreme Point	$\frac{3}{4}$	2.00	2.25	2.50	3.00	3.50	4.00	5.00	.....	.....	.....	.....
	1	2.25	2.50	2.75	3.25	3.75	4.25	5.30	6.60	.....	.....	.....
	$1\frac{1}{4}$	2.50	2.75	3.00	3.50	4.00	4.50	5.60	6.90	9.00	.....	.....
	$1\frac{1}{2}$	2.75	3.00	3.25	3.75	4.25	4.75	5.90	7.20	9.50	12.00	.....
	$1\frac{3}{4}$	3.00	3.25	3.50	4.00	4.50	5.00	6.20	7.50	10.00	12.50	15.25
	2	3.25	3.50	3.75	4.35	5.00	5.50	6.75	8.00	10.75	13.00	16.00
	$2\frac{1}{4}$	3.50	3.75	4.00	4.75	5.50	6.00	7.25	8.50	11.50	13.75	16.75
	$2\frac{1}{2}$	3.75	4.00	4.25	5.15	6.00	6.50	7.75	9.00	12.00	14.50	17.50
	$2\frac{3}{4}$	4.00	4.25	4.50	5.55	6.50	7.00	8.25	9.50	12.75	15.25	18.30
	3	4.25	4.50	4.75	5.95	7.00	7.50	8.75	10.00	13.50	16.00	19.10
	$3\frac{1}{4}$.....	.....	4.75	5.00	6.35	7.50	8.00	9.25	10.50	14.25	16.75	20.00
	$3\frac{1}{2}$.....	.....	.....	5.25	6.75	8.00	8.50	9.75	11.00	15.00	17.50	21.00
	$3\frac{3}{4}$.....	.....	.....	.....	7.15	8.50	9.00	10.25	11.50	15.75	18.25	22.00
	4.....	.....	.....	.....	.....	9.00	9.50	10.75	12.00	16.50	19.00	23.00
	$4\frac{1}{4}$.....	.....	.....	.....	.....	.....	10.00	11.25	12.50	17.25	19.75	24.00
	$4\frac{1}{2}$.....	.....	.....	.....	.....	.....	.....	11.75	13.00	18.00	20.50	25.00
	$4\frac{3}{4}$.....	.....	.....	.....	.....	.....	.....	12.25	13.50	18.75	21.25	26.00
	5.....	.....	.....	.....	.....	.....	.....	12.75	14.00	19.50	22.00	27.00
	$5\frac{1}{4}$.....	.....	.....	.....	.....	.....	.....	13.25	14.50	20.25	22.75	28.00
	$5\frac{1}{2}$.....	.....	.....	.....	.....	.....	.....	13.75	15.00	21.00	23.50	29.00
	$5\frac{3}{4}$.....	.....	.....	.....	.....	.....	.....	14.25	15.50	21.75	24.25	30.00
	6.....	.....	.....	.....	.....	.....	.....	14.75	16.00	22.50	25.00	31.00
Threads per Inch.....	40	24	20	18	16	14	12	12	11	10	9	8

Iron Machine Screws



Fig. 4170. Flat Head



Fig. 4171. Round Head



Fig. 4172. Fillister Head

Iron Machine Screws—Price Per Gross
Flat, Round or Fillister Head

Length, Inches	Number													
	2 and 3	4	5	6	7 and 8	9 and 10	12	14	16	18	20	24	30	34
$\frac{1}{8}$	.30	.30	.35	.35	.40	....	....	....	....	....	....	....	....	....
$\frac{1}{16}$	.30	.30	.35	.35	.40	.60	....	....	....	....	....	....	....	....
$\frac{1}{4}$	.30	.30	.35	.35	.40	.60	.70	.85	....	....	....	....	....	....
$\frac{3}{8}$	.32	.32	.37	.37	.44	.65	.75	.90	1.15	....	....	....	....	....
$\frac{1}{2}$	.32	.32	.37	.37	.44	.65	.75	.90	1.15	1.50	1.90	2.30	....	....
$\frac{3}{4}$	.34	.34	.39	.39	.48	.70	.80	.95	1.20	1.60	2.00	2.40	....	....
$\frac{1}{2}$	.34	.34	.39	.39	.48	.70	.80	.95	1.20	1.60	2.00	2.40	....	....
$\frac{3}{8}$	.37	.37	.42	.42	.52	.75	.85	1.00	1.25	1.70	2.10	2.50	....	....
$\frac{1}{4}$	.37	.37	.42	.42	.52	.75	.85	1.00	1.25	1.70	2.10	2.50	....	....
$\frac{3}{16}$	.41	.41	.46	.46	....	....	....	....	....	....	....	....	....	....
$\frac{1}{8}$	.41	.41	.46	.46	.56	.80	.90	1.05	1.30	1.80	2.20	2.60	4.00	5.10
$\frac{1}{16}$	.45	.45	.50	.50	....	....	....	....	....	....	....	....	....	....
$\frac{3}{8}$	.45	.45	.50	.50	.60	.85	.95	1.15	1.40	1.90	2.30	2.70	4.25	5.85
$\frac{1}{4}$	....	.50	.55	.55	....	....	....	....	....	....	....	....	....	....
1	....	.50	.55	.55	.65	.90	1.00	1.25	1.50	2.00	2.40	2.80	4.50	6.60
$\frac{1}{8}$	....	.55	.60	.60	.70	1.00	1.10	1.35	1.60	2.20	2.60	3.00	5.00	7.00
$\frac{1}{16}$	....	.60	.65	.65	.75	1.10	1.20	1.45	1.75	2.40	2.80	3.20	5.25	7.35
$\frac{3}{8}$	....	.65	.70	.70	.80	1.20	1.30	1.55	1.90	2.60	3.00	3.40	5.75	8.00
$\frac{1}{2}$	....	.70	.75	.75	.85	1.30	1.40	1.65	2.10	2.80	3.20	3.60	6.00	8.00
$\frac{3}{8}$	....	.80	.85	.85	.95	1.40	1.50	1.75	2.30	3.00	3.40	3.80	6.35	....
$\frac{1}{4}$	....	.90	.95	.95	1.05	1.50	1.60	1.85	2.50	3.20	3.60	4.20	6.65	8.60
$\frac{3}{16}$	....	1.00	1.05	1.05	1.15	1.60	1.70	2.00	2.70	3.40	3.80	4.40	7.00	....
$\frac{1}{8}$	....	1.10	1.15	1.15	1.25	1.70	1.80	2.20	2.90	3.60	4.00	4.60	7.35	9.40
2	....	....	1.25	1.25	1.45	1.90	2.20	2.60	3.30	4.00	4.40	4.80	8.00	10.30
$\frac{1}{4}$	....	....	....	....	1.65	2.20	2.50	2.80	3.50	4.40	4.90	5.30	8.90	11.50
$\frac{3}{8}$	....	....	....	....	....	....	....	....	....	....	....	....	....	....
$\frac{1}{2}$	....	....	....	....	....	....	....	....	....	....	....	....	....	....
$\frac{3}{4}$	....	....	....	....	....	....	....	....	....	....	....	....	....	....
1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
$\frac{1}{8}$	....	....	....	....	....	....	....	....	....	....	....	....	....	....
$\frac{1}{4}$	....	....	....	....	....	....	....	....	....	....	....	....	....	....
$\frac{3}{8}$	....	....	....	....	....	....	....	....	....	....	....	....	....	....
$\frac{1}{2}$	....	....	....	....	....	....	....	....	....	....	....	....	....	....
4	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Threads.....	48, 56 *64	32, 36, 40	30, 32 36	30, 32 36	24, 30 32	20, 24 24	18, 20 24	16, 18, 20	16, 18	14, 16 18	14, 16	13		

Brass Machine Screws—Price Per Gross
Flat, Round or Fillister Head

Length, Inches	Number													
	2 and 3	4	5	6	7 and 8	9 and 10	12	14	16	18	20	24	30	34
$\frac{1}{8}$	.32	.36	.46	.46	.70	....	....	....	....	....	....	....	....	....
$\frac{1}{16}$	.32	.36	.46	.46	.70	1.00	....	....	....	....	....	....	....	....
$\frac{1}{4}$	.32	.36	.46	.46	.70	1.00	1.25	1.65	....	....	....	....	....	....
$\frac{3}{8}$	.34	.38	.49	.49	.75	1.05	1.35	1.75	....	....	....	....	....	....
$\frac{1}{2}$	.36	.40	.52	.52	.80	1.10	1.45	1.85	2.90	3.70	4.60	5.50	....	....
$\frac{3}{4}$	.38	.42	.55	.55	.85	1.15	1.55	2.00	3.05	3.90	4.80	5.60	....	....
$\frac{1}{2}$	.40	.44	.58	.58	.90	1.25	1.65	2.15	3.20	4.10	5.00	5.75	....	....
$\frac{3}{8}$	.43	.47	.62	.62	.95	1.35	1.75	2.30	3.35	4.30	5.25	6.30	....	....
$\frac{1}{4}$	.46	.50	.66	.66	1.00	1.45	1.85	2.45	3.50	4.50	5.50	6.50	....	....
$\frac{3}{16}$	.49	.53	.70	.70	....	....	....	....	....	....	....	....	....	....
$\frac{1}{8}$	.52	.56	.74	.74	1.10	1.65	2.05	2.75	3.80	4.90	6.00	6.70	....	15.75
$\frac{1}{16}$	.55	.59	.78	.78	....	....	....	....	....	....	....	....	....	....
$\frac{3}{8}$	.58	.62	.82	.82	1.20	1.85	2.25	3.05	4.10	5.30	6.50	7.40	....	17.10
$\frac{1}{4}$	.65	.65	.86	.86	....	....	....	....	....	....	....	....	....	....
1	.70	.90	.90	.90	1.30	2.05	2.45	3.35	4.40	5.70	7.00	8.50	15.75	18.50
$\frac{1}{8}$	.80	1.05	1.05	1.05	1.45	2.20	2.65	3.55	4.65	6.00	7.50	9.00	....	....
$\frac{1}{4}$	.90	1.20	1.20	1.20	1.60	2.35	2.85	3.75	4.90	6.30	8.00	9.90	18.75	22.10
$\frac{3}{8}$	1.00	1.35	1.35	1.35	1.75	2.50	3.05	3.95	5.20	6.60	8.50	11.50	....	....
$\frac{1}{2}$	1.10	1.50	1.50	1.50	1.90	2.65	3.25	4.15	5.50	6.90	9.00	12.00	22.50	26.65
$\frac{3}{4}$	....	1.25	1.70	1.70	2.10	2.85	3.50	4.40	5.85	7.30	9.50	....	....	....
$\frac{1}{2}$	....	1.40	1.90	1.90	2.30	3.05	3.75	4.65	6.20	7.70	10.00	12.70	24.25	28.10
$\frac{3}{8}$	....	1.55	2.10	2.10	2.50	3.25	4.00	4.90	6.60	8.10	10.50	....	....	....
2	....	1.70	2.30	2.30	2.70	3.45	4.25	5.15	7.00	8.60	11.00	13.50	26.00	30.20
$\frac{1}{4}$	....	....	2.70	2.70	3.10	3.85	4.75	5.65	8.00	9.75	12.00	14.90	28.00	32.95
$\frac{3}{8}$	....	....	....	....	....	4.65	5.80	6.80	9.00	10.50	13.50	15.50	30.50	35.65
$\frac{1}{2}$	....	....	....	....	....	6.00	7.00	8.00	10.00	12.50	15.00	17.00	33.00	....
3	....	....	....	....	....	7.50	8.50	9.50	11.00	15.00	16.50	19.00	36.00	....
$\frac{3}{4}$	....	....	....	....	....	9.00	10.50	11.50	15.00	17.50	18.50	22.50	39.50	....
$\frac{1}{2}$	....	....	....	....	....	11.00	12.50	15.00	18.00	19.50	22.00	25.50	42.75	....
$\frac{3}{4}$	....	....	....	....	....	13.50	15.00	18.50	20.00	22.50	25.00	28.00	46.60	....
$\frac{1}{2}$	....	....	....	....	....	16.50	18.00	22.00	25.00	26.50	28.00	32.00	49.50	....
Threads.....	48, 56 64	32, 36, 40	30, 32 36	30, 32 36	24, 30 32	20 24	18, 20 24	16, 18, 20	16, 18	14, 16 18	14, 16	13		

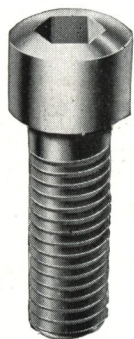
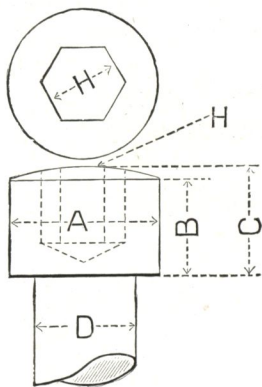
Any size of screw, not listed above, shall take the list price of the next larger or longer length.

*No. 3 not made in 64 threads.

†No. 7 not made in 36 threads.

Socket Head Cap Screws—Case Hardened

Price Per 100—Including 8 Wrenches

Fig. 4180
Socket Head Cap Screw

Dimensions

A	Diam. of Head	1/4"	3/8"	1/2"	5/8"	3/4"	1 1/8"	1 1/4"	1 1/2"
B	Oval Head Length of Side	1 1/8"	1 1/4"	1 1/2"	1 3/4"	1 7/8"	2 1/8"	2 1/4"	2 1/2"
C	Length of Flat Head	3/16"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	7/8"
D	Diam. of Screw	3/16"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	7/8"
H	Size of Hex. Hole	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"
	Threads Per Inch U. S. S.	24	20	18	16	14	13	12	11

Diam. of Head	3/8"	1/2"	5/8"	3/4"	1 1/8"	1 1/4"	1 1/2"	1 3/4"	1 7/8"	2"
Diam. of Screw	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	7/8"	1"	1 1/8"	1 1/4"
Length Under Head to Extreme Point, Inches	3/4	5.00	5.00	6.00	7.50	9.00	10.00	11.00	12.00	13.00
1	5.25	5.25	6.25	7.75	9.25	10.75	12.25	13.75	15.25	16.75
1 1/4	5.50	5.50	6.50	8.00	9.50	11.00	12.50	14.00	15.50	17.00
1 1/2	5.75	5.75	6.75	8.25	9.75	11.25	12.75	14.25	15.75	17.25
1 3/4	6.00	6.00	7.00	8.50	10.00	11.50	13.00	14.50	16.00	17.50
2	6.25	6.25	7.25	8.75	10.25	11.75	13.25	14.75	16.25	17.75
2 1/4	6.50	6.50	7.50	9.00	10.50	12.00	13.50	15.00	16.50	18.00
2 1/2	6.75	6.75	7.75	9.25	10.75	12.25	13.75	15.25	16.75	18.25
2 3/4	7.00	7.00	8.00	9.50	11.00	12.50	14.00	15.50	17.00	18.50
3	7.25	7.25	8.25	9.75	11.25	12.75	14.25	15.75	17.25	18.75
3 1/4	7.50	7.50	8.50	10.00	11.50	13.00	14.50	16.00	17.50	19.00
3 1/2	7.75	7.75	8.75	10.25	11.75	13.25	14.75	16.25	17.75	19.25
3 3/4	8.00	8.00	9.00	10.50	12.00	13.50	15.00	16.50	18.00	19.50
4	8.25	8.25	9.25	10.75	12.25	13.75	15.25	16.75	18.25	19.75
4 1/4	8.50	8.50	9.50	11.00	12.50	14.00	15.50	17.00	18.50	20.00
4 1/2	8.75	8.75	9.75	11.25	12.75	14.25	15.75	17.25	18.75	20.25
4 3/4	9.00	9.00	10.00	11.50	13.00	14.50	16.00	17.50	19.00	20.50
5	9.25	9.25	10.25	11.75	13.25	14.75	16.25	17.75	19.25	20.75
5 1/4	9.50	9.50	10.50	12.00	13.50	15.00	16.50	18.00	19.50	21.00
5 1/2	9.75	9.75	10.75	12.25	13.75	15.25	16.75	18.25	19.75	21.25
5 3/4	10.00	10.00	11.00	12.50	14.00	15.50	17.00	18.50	20.00	21.50
6	10.25	10.25	11.25	12.75	14.25	15.75	17.25	18.75	20.25	21.75

Add 5 per cent. for Polishing.

Extra Wrenches Each	.04	.04	.06	.06	.06	.06	.09	.12
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Steel Set Screws



Fig. 4182. Cup Point Set Screw

Steel Set Screws—Price Per 100

Diameter of Screw	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	7/8"	1"	1 1/8"	1 1/4"
1/2"	1.80	2.00	2.35	2.80	3.30	5.00	5.00	10.00	15.50	22.00
5/8"	1.90	2.10	2.45	2.90	3.40	5.10	5.10	10.10	15.60	22.10
3/4"	2.00	2.20	2.50	3.00	3.50	5.20	5.20	10.20	15.70	22.20
7/8"	2.10	2.30	2.60	3.10	3.60	5.30	5.30	10.30	15.80	22.30
1"	2.15	2.35	2.65	3.15	3.65	5.35	5.35	10.35	15.85	22.35
1 1/4"	2.30	2.50	2.85	3.50	4.30	6.50	6.50	11.00	16.50	23.00
1 1/2"	2.50	2.70	3.10	4.00	4.80	7.25	7.25	12.00	17.50	24.00
1 3/4"	2.75	3.00	3.50	4.50	5.90	8.00	8.00	12.80	18.70	25.00
2"	3.25	3.50	4.00	5.15	6.00	8.80	8.80	13.60	19.20	26.00
2 1/4"	3.75	4.00	4.50	5.75	6.75	9.60	9.60	14.50	20.70	28.00
2 1/2"	4.25	4.50	5.00	6.35	7.50	10.40	10.40	15.40	22.20	30.00
2 3/4"	4.75	5.00	5.50	6.75	8.25	11.20	11.20	16.30	23.70	32.00
3"	5.25	5.50	6.00	7.20	9.00	12.00	12.00	17.30	25.20	34.00
3 1/4"	5.75	6.00	6.50	7.60	9.75	12.75	12.75	18.40	26.70	36.00
3 1/2"	6.25	6.50	7.00	8.00	10.50	13.50	13.50	19.50	28.20	38.00
3 3/4"	6.75	7.00	7.50	8.50	11.25	14.30	14.30	20.75	29.70	40.00
4"	7.25	7.50	8.00	9.00	12.00	15.10	15.10	22.00	31.20	42.00
4 1/4"	7.75	8.00	8.50	9.50	12.75	15.90	15.90	23.50	32.70	44.00
4 1/2"	8.25	8.50	9.00	10.00	13.50	16.70	16.70	25.00	34.20	46.00
4 3/4"	8.75	9.00	9.50	10.50	14.25	17.50	17.50	26.50	35.70	48.00
5"	9.25	9.50	10.00	11.00	15.00	18.25	18.25	27.20	37.20	50.00
Threads per Inch	20	18	16	14	12	12	11	10	9	8
Add for each 1/4 inch	.50	.60	.70	.80	1.50	1.10	1.10	1.50	1.70	2.25

In ordering state style point wanted—Square, Flat, Round, Conical, Pivot, Hanger, Dog or Cup.
For extra finishing add 20 per cent. to net price.

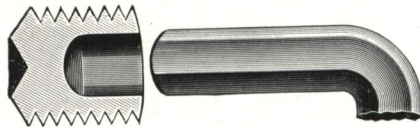
For case-hardening and extra finishing add 30 per cent. to net price.

Safety Set Screws

Eight Wrenches Furnished With Each 100 Screws, Without Charge



Fig. 4190. Oval



Section of Screw and Wrench

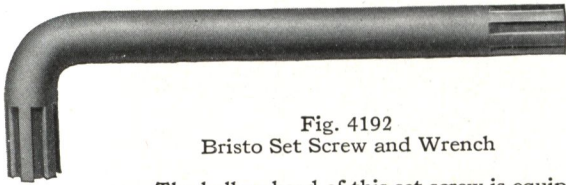


Fig. 4191. Cup

Cup and Oval Point Safety Set Screws

Size of Hexagon Hole.....	$\frac{1}{8}$	$\frac{5}{32}$	$\frac{3}{16}$	$\frac{7}{32}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{9}{16}$
Diameter of Screw.....	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1
Length Over All	$\frac{5}{16}$ Price per 100.....	4.00	4.00	.....	.....	.....	.....	.....	.....	.....
	$\frac{3}{8}$ Price per 100.....	.....	4.00	5.00	.....	.....	.....	.....	.....	.....
	$\frac{7}{16}$ Price per 100.....	.....	.....	.....	6.00	.....	.....	.....	.....	.....
	$\frac{1}{2}$ Price per 100.....	.....	.....	5.00	6.00	7.00	.....	.....	.....	.....
	$\frac{9}{16}$ Price per 100.....	.....	.....	.....	.....	8.00	.....	.....	.....	.....
	$\frac{5}{8}$ Price per 100.....	.....	.....	.....	7.00	.....	10.00	.....	.....	.....
	$\frac{3}{4}$ Price per 100.....	.....	.....	.....	.....	.....	10.00	12.00	.....	.....
	$\frac{7}{8}$ Price per 100.....	.....	.....	.....	.....	.....	.....	.....	15.00	.....
	1 Price per 100.....	.....	.....	.....	.....	.....	.....	12.00	.....	20.00
	$1\frac{1}{8}$ Price per 100.....	.....	.....	.....	.....	.....	.....	.....	15.00	.....
	$1\frac{1}{4}$ Price per 100.....	.....	.....	.....	.....	.....	.....	.....	.....	20.00
Extra Wrenches, each.....	.02	.03	.04	.05	.06	.07	.07	.09	.11	.13
Number of Screws per box....	100	100	100	50	50	25	25	25	25	25
U. S. S. Thread, per inch.....	20	18	16	14	12-13	12	11	10	9	8
V Thread, per inch.....	20	18	16	14	12-13	12	11	10	9	8

Bristo Safety Set Screws

Fig. 4192
Bristo Set Screw and Wrench

The Bristo Safety Set Screw protects itself from all danger of the metal spreading and the screw becoming cracked or split. The dovetailed design of screw and wrench contracts the metal under pressure, or the harder the wrench is twisted the more the metal of the screw is compressed.

The hollow head of this set screw is equipped with dove-tailed slots or flutes into which the corresponding dove-tailed projections of the wrench fit.

Specified by safety inspectors and engineers because of its mechanically correct design and universally used for machinery, countershafts, pulleys, collars, etc.

Bristo Set Screws

Size No.....	40	50	60	70	80	90	100	120	140	160
Diameter of Screw, inch.....	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1
Stock Lengths, inches.....	$\frac{5}{16}$	$\frac{5}{16}$ or $\frac{3}{8}$	$\frac{3}{8}$ or $\frac{1}{2}$	$\frac{7}{16}$ or $\frac{1}{2}$	$\frac{1}{2}$ or $\frac{5}{8}$	$\frac{9}{16}$	$\frac{5}{8}$ or $\frac{3}{4}$	$\frac{3}{4}$ or 1	$\frac{7}{8}$ or $1\frac{1}{8}$	1 or $1\frac{1}{4}$
U. S. Std. Thread per inch....	20	18	16	14	13	12	11	10	9	8
Per 100 with 8 Wrenches.....	4.00	4.00	5.00	6.00	7.00	8.00	10.00	12.00	15.00	20.00
Extra Wrenches, each.....	.06	.07	.08	.09	.12	.14	.18	.22	.26	.30
Screws and Wrenches } Packed in Each Box. }	Screws	100	100	100	50	50	25	25	25	12
	Wrenches	8	8	8	4	4	2	2	2	1

In ordering specify Quantity, Size Number and Length.

Tinnern Rivets—Flat Heads

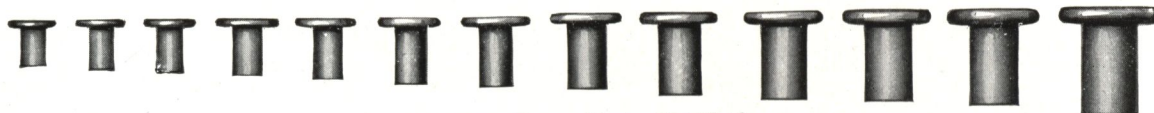


Fig. 4200. Tinnern Rivets—Flat Head

Weight of 1,000	Size Length	Diameter Wire	List Price per 1,000 in Packages of 1,000		
			Black	Tin Plated	Metallic Tinned
8 oz.	$\frac{5}{16}$	No. 13 $\frac{1}{4}$	.22	.26	.31
10 oz.	$\frac{11}{16}$	No. 13	.24	.29	.35
12 oz.	$\frac{13}{16}$	No. 12 $\frac{1}{4}$	.26	.32	.39
14 oz.	$\frac{3}{8}$	No. 12	.28	.35	.43
1 lb.	$\frac{13}{16}$	No. 11 $\frac{3}{4}$	.29	.37	.47
1 $\frac{1}{4}$ lb.	$\frac{7}{8}$	No. 11	.32	.42	.54
1 $\frac{3}{4}$ lb.	$\frac{15}{16}$	No. 10 $\frac{1}{4}$	.37	.49	.64
2 lb.	$\frac{1}{8}$	No. 10	.41	.55	.72
2 $\frac{1}{2}$ lb.	$\frac{1}{4}$	No. 9 $\frac{1}{4}$	.44	.59	.79
3 lb.	$\frac{3}{8}$	No. 9	.56	.75	1.00
3 $\frac{1}{2}$ lb.	$\frac{1}{2}$	No. 8 $\frac{1}{4}$	.62	.85	1.15
4 lb.	$\frac{5}{8}$	No. 8	.72	.99	1.34
5 lb.	$\frac{3}{4}$	No. 7 $\frac{1}{4}$	.79	1.09	1.49
6 lb.	$\frac{7}{8}$	No. 6 $\frac{3}{4}$	1.00	1.38	1.88
7 lb.	$\frac{15}{16}$	No. 6	1.12	1.57	2.17
8 lb.	$\frac{1}{8}$	No. 5 $\frac{1}{4}$	1.31	1.84	2.54
9 lb.	$\frac{1}{4}$	No. 4 $\frac{3}{4}$	1.50	2.10	2.90
10 lb.	$\frac{3}{8}$	No. 4 $\frac{1}{4}$	1.68	2.36	3.26
12 lb.	$\frac{1}{2}$	No. 4	1.77	2.52	3.52
14 lb.	$\frac{3}{4}$	No. 3	2.06	2.96	4.16
15 lb.	$\frac{7}{8}$	No. 2	2.40	3.45	4.85
		No. 1	2.77	3.97	5.57

List Price per Pound Packed in 5 or 10-Pound Boxes			
Size	Black	Size	Black
8 oz.	.42	3 $\frac{1}{2}$ lb.	.23
10 oz.	.38	4 lb.	.22
12 oz.	.35	5 lb.	.22
14 oz.	.33	6 lb.	.21
1 lb.	.30	7 lb.	.21
1 $\frac{1}{4}$ lb.	.27	8 lb.	.21
1 $\frac{1}{2}$ lb.	.26	9 lb.	.21
1 $\frac{3}{4}$ lb.	.25	10 lb.	.20
2 lb.	.24	12 lb.	.19 $\frac{1}{2}$
2 $\frac{1}{2}$ lb.	.24	14 lb.	.19 $\frac{1}{2}$
3 lb.	.23	16 lb.	.19 $\frac{1}{2}$

List Extras. For Oval or Countersunk Heads, Shoulder, Pointed, or Extra Lengths, add 10 cents per 1000 to the List Price for each specialty.

List Rebates. For 25 or 50-pound boxes deduct 2 cents per pound from the List Price. For 100-pound boxes deduct 3 cents per pound from the List Price. For 100 and 200-pound kegs deduct 4 cents per pound from the List Price.

Net Extras. For Metallic Tinning add 3 $\frac{1}{2}$ cents per pound to the Net Price. For Copper or Tin Plating add 1 $\frac{1}{2}$ cents per pound to the Net Price.

When "Tinned" Rivets are ordered, Metallic Tinned are furnished. For Bright Polishing after Annealing, add 25 cents net extra per cwt.

Rivets—Any Style Head

Fig. 4201
Steeple
HeadFig. 4202
Cone HeadFig. 4203
Flat HeadFig. 4204
Countersunk
HeadFig. 4205
Bung HeadFig. 4206
Wagon Box
HeadFig. 4207
Oval HeadFig. 4208
Truss Hoop
Head

Price Per Pound in 5 and 10-Pound Boxes

Length, Inches																
Size Wire	One Inch to Six Inches	$\frac{7}{8}$	$\frac{3}{4}$	$\frac{5}{8}$ & $\frac{1}{2}$	$\frac{11}{16}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{3}{4}$
$\frac{1}{2}$ or $\frac{1}{16}$	19	19 $\frac{1}{2}$	19 $\frac{1}{2}$	20	..	..	..	..	..	..	..	..	..	..	..	..
$\frac{3}{8}$	19	19 $\frac{1}{2}$	19 $\frac{1}{2}$	20	21	..	..	..	..	..	..	..	..	..	..	..
$\frac{11}{16}$	19 $\frac{1}{2}$	20	20	20 $\frac{1}{2}$	21	21	..	..	..	..	..	..	..	..	..	..
$\frac{1}{2}$	19 $\frac{1}{2}$	20	20	20 $\frac{1}{2}$	21	22	22	22	22	22	22	..	..	..	..	..
1	20	20 $\frac{1}{2}$	20 $\frac{1}{2}$	21	22	23	23	23	23	23	23	24	..	..	..	..
2 or $\frac{5}{8}$	20	20 $\frac{1}{2}$	20 $\frac{1}{2}$	21	22	23	23	23	23	23	23	24	24	..	..	..
3	20	20 $\frac{1}{2}$	20 $\frac{1}{2}$	21	22	23	23	23	23	23	23	24	24	24	..	..
$\frac{1}{4}$	20	20 $\frac{1}{2}$	20 $\frac{1}{2}$	21	22	23	23	23	23	23	23	24	24	24	25	..
4	21	21 $\frac{1}{2}$	21 $\frac{1}{2}$	22	23	23	24	24	24	24	24	24	24	25	25	26
5 or $\frac{7}{8}$	21	21 $\frac{1}{2}$	21 $\frac{1}{2}$	22	23	24	24	24	24	24	25	26	26	27	27	28
6	21	21 $\frac{1}{2}$	21 $\frac{1}{2}$	22	23	24	24	24	24	24	25	26	26	27	28	29
$\frac{1}{16}$	21	21 $\frac{1}{2}$	21 $\frac{1}{2}$	22	23	24	24	24	24	24	25	26	26	27	28	29
7	21	21 $\frac{1}{2}$	22	23	24	24	24	24	24	24	25	26	26	27	28	29
8 or $\frac{5}{8}$	22	22 $\frac{1}{2}$	22 $\frac{1}{2}$	23	24	25	25	25	25	25	26	27	27	28	29	30
9	23	23 $\frac{1}{2}$	23 $\frac{1}{2}$	24	25	26	26	26	26	26	27	28	28	29	30	31
10	24	24 $\frac{1}{2}$	24 $\frac{1}{2}$	25	26	27	27	27	27	27	28	29	29	30	31	32
11 or $\frac{1}{8}$	25	25 $\frac{1}{2}$	25 $\frac{1}{2}$	26	28	30	32	33	34	36	37	37	39	43	46	48
12	26	26 $\frac{1}{2}$	26 $\frac{1}{2}$	27	30	32	34	35	36	38	40	41	42	47	51	56
13 or $\frac{3}{8}$	30	30 $\frac{1}{2}$	30 $\frac{1}{2}$	31	33	36	39	40	41	43	47	46	47	51	56	61
14	32	32 $\frac{1}{2}$	32 $\frac{1}{2}$	33	36	41	44	46	51	56	58	61	64	66	69	71

Rivets made from smaller wire than No. 14, all lengths, list 80 cents per pound. Intermediate lengths and diameters take List Price of next smaller size.

List Extras

For Shoulder or Pointed Rivets, add 2 cents per pound to the List Price for each specialty, excepting Pointed Hame, Caster or Sucker Rod Rivets.

List Rebates

For 25 or 50-pound Boxes deduct 2 cents per pound from the List Price. For 100-pound Boxes, deduct 3 cents per pound from the List Price. For 100 or 200 pound Kegs, deduct 4 cents per pound from the List Price.

Net Extras

For Tin or Copper Plating, add 1 $\frac{1}{2}$ cents per pound to the Net Price. For Metallic Tinning, add 3 $\frac{1}{2}$ cents per pound to the Net Price.

When "Tinned" Rivets are ordered, Metallic Tinned are furnished. For Bright Polishing after Annealing, add 25 cents net extra per cwt.

Machinery and Soft Steel—Stock Sizes

(Continued)

Squares

Squares	Weight Per Foot Pounds	Squares	Weight Per Foot Pounds	Squares	Weight Per Foot Pounds
$\frac{3}{16}$	.119	1	3.400	$2\frac{1}{4}$	17.22
$\frac{1}{4}$	.212	$1\frac{1}{8}$	4.303	$2\frac{1}{2}$	21.25
$\frac{5}{16}$	.333	$1\frac{1}{4}$	5.312	$2\frac{3}{4}$	25.71
$\frac{3}{8}$	.478	$1\frac{3}{8}$	6.428	3	30.60
$\frac{7}{16}$	.651	$1\frac{1}{2}$	7.650	$3\frac{1}{4}$	35.92
$\frac{1}{2}$	.850	$1\frac{5}{8}$	8.978	$3\frac{1}{2}$	41.65
$\frac{9}{16}$	1.076	$1\frac{3}{4}$	10.41	4	54.40
$\frac{5}{8}$	1.328	$1\frac{7}{8}$	11.95	$4\frac{1}{2}$	68.85
$\frac{3}{4}$	1.913	2	13.60	5	85.00
$\frac{7}{8}$	2.603	$2\frac{1}{8}$	15.35		

Flats

Flats	Weight Per Foot Pounds	Flats	Weight Per Foot Pounds	Flats	Weight Per Foot Pounds	Flats	Weight Per Foot Pounds	Flats	Weight Per Foot Pounds
$\frac{3}{8} \times \frac{1}{8}$	.159	$1\frac{1}{8} \times \frac{5}{8}$	2.39	$1\frac{3}{4} \times \frac{1}{8}$	.75	$2\frac{1}{2} \times \frac{5}{16}$	2.65	$3\frac{1}{4} \times \frac{3}{4}$	8.29
$\frac{3}{8} \times \frac{3}{16}$	.239	$\frac{3}{8} \times \frac{3}{4}$	2.87	$\frac{3}{8} \times \frac{1}{4}$	1.11	$\frac{3}{8} \times \frac{3}{8}$	3.19	$\frac{3}{4} \times 1$	11.05
$\frac{3}{8} \times \frac{1}{4}$	.319	$\frac{3}{8} \times \frac{7}{8}$	3.35	$\frac{3}{8} \times \frac{1}{2}$	1.49	$\frac{3}{8} \times \frac{1}{2}$	4.25	$3\frac{1}{2} \times \frac{1}{8}$	1.49
$\frac{1}{2} \times \frac{1}{8}$	.212	$\frac{3}{8} \times 1$	3.83	$\frac{3}{8} \times \frac{3}{8}$	1.86	$\frac{3}{8} \times \frac{5}{8}$	5.31	$\frac{3}{8} \times \frac{3}{4}$	2.23
$\frac{1}{2} \times \frac{3}{16}$	.319	$1\frac{1}{4} \times \frac{1}{8}$	.53	$\frac{3}{8} \times \frac{3}{4}$	2.23	$\frac{3}{8} \times \frac{3}{4}$	6.38	$\frac{3}{8} \times \frac{1}{2}$	2.98
$\frac{1}{2} \times \frac{1}{4}$	.425	$\frac{1}{2} \times \frac{1}{8}$	.80	$\frac{3}{8} \times \frac{1}{2}$	2.98	$\frac{3}{8} \times \frac{7}{8}$	7.44	$\frac{3}{8} \times \frac{5}{8}$	3.72
$\frac{1}{2} \times \frac{3}{8}$	.53	$\frac{1}{2} \times \frac{3}{16}$	1.06	$\frac{3}{8} \times \frac{5}{8}$	3.72	$\frac{3}{8} \times 1$	8.50	$\frac{3}{8} \times \frac{3}{8}$	4.47
$\frac{1}{2} \times \frac{1}{2}$	.64	$\frac{1}{2} \times \frac{1}{4}$	1.33	$\frac{3}{8} \times \frac{3}{4}$	4.47	$\frac{3}{8} \times 1\frac{1}{8}$	9.57	$\frac{3}{8} \times \frac{1}{2}$	5.95
$\frac{5}{8} \times \frac{1}{8}$	.265	$\frac{1}{2} \times \frac{3}{8}$	1.59	$\frac{3}{8} \times \frac{7}{8}$	5.20	$\frac{3}{8} \times 1\frac{1}{4}$	10.63	$\frac{3}{8} \times \frac{5}{8}$	7.44
$\frac{5}{8} \times \frac{3}{16}$	.40	$\frac{1}{2} \times \frac{1}{2}$	1.86	$\frac{3}{8} \times 1$	5.95	$\frac{3}{8} \times 1\frac{1}{2}$	12.75	$\frac{3}{8} \times \frac{3}{4}$	8.93
$\frac{5}{8} \times \frac{1}{4}$	.53	$\frac{1}{2} \times \frac{3}{4}$	2.12	$\frac{3}{8} \times 1\frac{1}{8}$	6.70	$\frac{3}{8} \times 1\frac{1}{2}$	14.88	$\frac{3}{8} \times \frac{7}{8}$	10.41
$\frac{5}{8} \times \frac{3}{8}$	.67	$\frac{1}{2} \times \frac{5}{8}$	2.65	$\frac{3}{8} \times 1\frac{1}{4}$	7.44	$\frac{3}{8} \times 1\frac{3}{4}$	17.00	$\frac{3}{8} \times 1$	11.90
$\frac{5}{8} \times \frac{1}{2}$	.80	$\frac{1}{2} \times \frac{3}{4}$	3.19	$\frac{3}{8} \times 1\frac{1}{2}$	8.93	$2\frac{3}{4} \times \frac{1}{8}$	1.17	$\frac{3}{8} \times 1\frac{1}{8}$	13.39
$\frac{3}{4} \times \frac{1}{8}$	1.06	$\frac{1}{2} \times \frac{7}{8}$	3.72	$1\frac{7}{8} \times \frac{1}{2}$	3.19	$\frac{3}{4} \times \frac{1}{16}$	1.75	$\frac{3}{8} \times 1\frac{1}{4}$	14.87
$\frac{3}{4} \times \frac{3}{16}$	.32	$\frac{1}{2} \times 1$	4.25	$\frac{3}{4} \times \frac{1}{8}$	3.99	$\frac{3}{4} \times \frac{1}{4}$	2.34	$\frac{3}{8} \times 1\frac{1}{2}$	17.85
$\frac{3}{4} \times \frac{1}{4}$	.48	$1\frac{3}{8} \times \frac{1}{8}$	.59	$\frac{3}{4} \times \frac{3}{8}$	4.79	$\frac{3}{4} \times \frac{5}{8}$	2.92	$\frac{3}{8} \times 1\frac{3}{4}$	20.83
$\frac{3}{4} \times \frac{3}{8}$	.64	$\frac{3}{8} \times \frac{1}{8}$	.88	$2 \times \frac{1}{8}$	.85	$\frac{3}{4} \times \frac{3}{4}$	3.51	$\frac{3}{8} \times 2$	23.80
$\frac{3}{4} \times \frac{1}{2}$	.80	$\frac{3}{8} \times \frac{3}{16}$	1.17	$\frac{3}{8} \times \frac{1}{4}$	1.28	$\frac{3}{4} \times \frac{7}{8}$	4.67	$\frac{3}{8} \times 2\frac{1}{2}$	29.74
$\frac{3}{4} \times \frac{3}{4}$	.96	$\frac{3}{8} \times \frac{1}{4}$	1.46	$\frac{3}{8} \times \frac{3}{8}$	1.70	$\frac{3}{4} \times 1$	5.84	$4 \times \frac{1}{8}$	1.70
$\frac{3}{4} \times 1$	1.12	$\frac{3}{8} \times \frac{3}{8}$	1.75	$\frac{3}{8} \times \frac{1}{2}$	2.12	$\frac{3}{4} \times \frac{1}{2}$	7.02	$\frac{3}{8} \times \frac{3}{16}$	2.55
$\frac{7}{8} \times \frac{1}{8}$	1.28	$\frac{3}{8} \times \frac{1}{2}$	2.05	$\frac{3}{8} \times \frac{5}{8}$	2.55	$\frac{3}{4} \times \frac{3}{4}$	8.18	$\frac{3}{8} \times \frac{1}{4}$	3.40
$\frac{7}{8} \times \frac{3}{16}$	1.60	$\frac{3}{8} \times \frac{1}{2}$	2.34	$\frac{3}{8} \times 1$	3.40	$\frac{3}{4} \times \frac{7}{8}$	9.35	$\frac{3}{8} \times \frac{5}{16}$	4.25
$\frac{7}{8} \times \frac{1}{4}$	.38	$\frac{3}{8} \times \frac{5}{8}$	2.92	$\frac{3}{8} \times 1\frac{1}{2}$	4.25	$\frac{3}{4} \times 1$	10.52	$\frac{3}{8} \times \frac{3}{8}$	5.10
$\frac{7}{8} \times \frac{3}{8}$	.56	$\frac{3}{8} \times \frac{3}{4}$	3.51	$\frac{3}{8} \times 1\frac{1}{4}$	4.25	$\frac{3}{4} \times 1\frac{1}{8}$	11.69	$\frac{3}{8} \times \frac{1}{2}$	6.80
$\frac{7}{8} \times \frac{1}{2}$	.75	$\frac{3}{8} \times \frac{7}{8}$	4.10	$\frac{3}{8} \times 1\frac{3}{4}$	5.10	$\frac{3}{4} \times 1\frac{1}{4}$	11.69	$\frac{3}{8} \times \frac{5}{8}$	8.50
$\frac{7}{8} \times \frac{3}{4}$	.93	$\frac{3}{8} \times 1$	4.68	$\frac{3}{8} \times 1$	5.95	$\frac{3}{4} \times 1\frac{1}{2}$	16.37	$\frac{3}{8} \times \frac{3}{4}$	10.20
$\frac{7}{8} \times 1$	1.12	$1\frac{1}{2} \times \frac{1}{8}$	.64	$\frac{3}{8} \times 1\frac{1}{8}$	6.80	$\frac{3}{4} \times 1\frac{3}{4}$	18.70	$\frac{3}{8} \times 1\frac{1}{2}$	11.90
$\frac{7}{8} \times \frac{3}{8}$	1.30	$\frac{3}{8} \times \frac{1}{8}$	.96	$\frac{3}{8} \times 1\frac{1}{4}$	7.65	$3 \times \frac{1}{8}$	1.28	$\frac{3}{8} \times 1\frac{3}{4}$	13.60
$\frac{7}{8} \times \frac{1}{2}$	1.49	$\frac{3}{8} \times \frac{3}{16}$	1.24	$\frac{3}{8} \times 1\frac{1}{2}$	8.50	$\frac{3}{8} \times \frac{1}{16}$	1.91	$\frac{3}{8} \times 2$	15.30
$\frac{7}{8} \times \frac{3}{4}$	1.86	$\frac{3}{8} \times \frac{1}{4}$	1.59	$\frac{3}{8} \times 1\frac{3}{4}$	10.20	$\frac{3}{8} \times \frac{1}{8}$	2.55	$\frac{3}{8} \times 2\frac{1}{2}$	17.00
$\frac{7}{8} \times 1$	2.24	$\frac{3}{8} \times \frac{3}{8}$	1.92	$2\frac{1}{4} \times \frac{1}{8}$	.96	$\frac{3}{8} \times \frac{3}{4}$	3.19	$\frac{3}{8} \times 3$	20.40
$1 \times \frac{1}{8}$	.425	$\frac{3}{8} \times \frac{1}{2}$	2.23	$\frac{3}{8} \times \frac{1}{4}$	1.44	$\frac{3}{8} \times \frac{7}{8}$	3.83	$\frac{3}{8} \times 3\frac{1}{4}$	23.80
$1 \times \frac{3}{16}$	.638	$\frac{3}{8} \times \frac{5}{8}$	2.55	$\frac{3}{8} \times \frac{1}{2}$	1.91	$\frac{3}{8} \times 1$	5.10	$\frac{3}{8} \times 4$	27.20
$1 \times \frac{1}{4}$	.85	$\frac{3}{8} \times \frac{3}{4}$	2.87	$\frac{3}{8} \times \frac{3}{8}$	2.39	$\frac{3}{8} \times 1\frac{1}{8}$	6.38	$\frac{3}{8} \times 4\frac{1}{4}$	30.60
$1 \times \frac{3}{8}$	1.06	$\frac{3}{8} \times \frac{7}{8}$	3.19	$\frac{3}{8} \times \frac{1}{2}$	2.87	$\frac{3}{8} \times 1\frac{1}{4}$	7.65	$\frac{3}{8} \times 4\frac{1}{2}$	34.00
$1 \times \frac{1}{2}$	1.28	$\frac{3}{8} \times 1$	3.83	$\frac{3}{8} \times \frac{5}{8}$	3.83	$\frac{3}{8} \times 1\frac{1}{2}$	8.93	$\frac{3}{8} \times 4\frac{3}{4}$	40.80
$1 \times \frac{3}{4}$	1.49	$\frac{3}{8} \times 1\frac{1}{8}$	4.47	$\frac{3}{8} \times \frac{3}{4}$	4.78	$\frac{3}{8} \times 1\frac{3}{4}$	10.20	$4\frac{1}{2} \times \frac{1}{8}$	1.92
1×1	1.70	$\frac{3}{8} \times 1\frac{1}{4}$	5.10	$\frac{3}{8} \times 1$	5.75	$\frac{3}{8} \times 2$	11.48	$4\frac{1}{2} \times \frac{3}{16}$	2.87
$1 \times 1\frac{1}{8}$	2.12	$\frac{3}{8} \times 1\frac{1}{2}$	5.74	$\frac{3}{8} \times 1\frac{1}{4}$	6.69	$\frac{3}{8} \times 2\frac{1}{4}$	12.75	$4\frac{1}{2} \times \frac{1}{4}$	3.83
$1 \times 1\frac{1}{4}$	2.55	$\frac{3}{8} \times 1\frac{3}{4}$	6.38	$\frac{3}{8} \times 1\frac{1}{2}$	7.65	$\frac{3}{8} \times 2\frac{1}{2}$	15.30	$4\frac{1}{2} \times \frac{3}{8}$	4.78
$1 \times 1\frac{1}{2}$	2.98	$\frac{3}{8} \times 2$	6.91	$\frac{3}{8} \times 1\frac{1}{8}$	8.61	$\frac{3}{8} \times 2\frac{3}{4}$	17.85	$4\frac{1}{2} \times \frac{1}{2}$	5.74
$1\frac{1}{8} \times \frac{1}{8}$	.48	$\frac{3}{8} \times 2\frac{1}{4}$	9.57	$\frac{3}{8} \times 1\frac{1}{4}$	9.57	$\frac{3}{8} \times 3$	20.40	$4\frac{1}{2} \times \frac{5}{8}$	7.65
$1\frac{1}{8} \times \frac{3}{16}$	.72	$\frac{3}{8} \times 2\frac{1}{2}$	11.48	$\frac{3}{8} \times 1\frac{1}{2}$	11.48	$\frac{3}{8} \times 3\frac{1}{4}$	22.95	$4\frac{1}{2} \times 1$	9.57
$1\frac{1}{8} \times \frac{1}{4}$	.96	$\frac{3}{8} \times 2\frac{3}{4}$	13.40	$\frac{3}{8} \times 1\frac{3}{4}$	13.40	$\frac{3}{8} \times 4$	25.50	$4\frac{1}{2} \times 1\frac{1}{8}$	11.48
$1\frac{1}{8} \times \frac{3}{8}$	1.20	$\frac{3}{8} \times 3$	15.30	$\frac{3}{8} \times 2$	15.30	$3\frac{1}{4} \times \frac{1}{4}$	2.76	$4\frac{1}{2} \times \frac{3}{4}$	13.39
$1\frac{1}{8} \times \frac{1}{2}$	1.44	$2\frac{1}{2} \times \frac{1}{8}$	1.06	$\frac{3}{8} \times 2\frac{1}{4}$	22.95	$\frac{3}{8} \times 2\frac{1}{2}$	4.15	$4\frac{1}{2} \times 1\frac{1}{4}$	15.30
$1\frac{1}{8} \times \frac{3}{4}$	1.68	$\frac{3}{8} \times 2\frac{1}{2}$	1.59	$\frac{3}{8} \times 2\frac{3}{4}$	25.50	$\frac{3}{8} \times 3$	5.53	$4\frac{1}{2} \times 1\frac{1}{2}$	17.21
$1\frac{1}{8} \times 1$	1.92	$\frac{3}{8} \times 3$	2.12	$\frac{3}{8} \times 3$	6.91	$\frac{3}{8} \times 3\frac{1}{4}$	7.65	$4\frac{1}{2} \times 1\frac{3}{4}$	19.13
						$\frac{3}{8} \times 4$	8.93	$4\frac{1}{2} \times 2$	22.95

Larger Flats to 18 x $\frac{3}{8}$ can be furnished from stock.

Machinery and Soft Steel

Stock Sizes, Hexagon

Hexagons	Weight Per Foot Pounds	Hexagons	Weight Per Foot Pounds	Hexagons	Weight Per Foot Pounds
$\frac{3}{8}$	.414	$1\frac{1}{16}$	3.324	$1\frac{5}{8}$	7.775
$\frac{1}{2}$	.736	$1\frac{3}{8}$	3.727	$1\frac{3}{4}$	9.018
$\frac{5}{8}$	1.150	$1\frac{3}{16}$	4.152	$1\frac{7}{8}$	10.352
$\frac{11}{16}$	1.392	$1\frac{1}{4}$	4.601	2	11.78
$\frac{3}{4}$	1.656	$1\frac{3}{8}$	5.567	$2\frac{1}{4}$	14.91
$\frac{7}{8}$	2.254	$1\frac{1}{2}$	6.085	$2\frac{1}{2}$	18.40
$\frac{15}{16}$	2.588	$1\frac{1}{2}$	6.625	$2\frac{3}{4}$	22.27
1	2.945	$1\frac{9}{16}$	7.189		

Ovals, Half Ovals and Half Rounds

Iron and Steel—Stock Sizes

Ovals	Weight Per Foot Pounds	Ovals	Weight Per Foot Pounds	Ovals	Weight Per Foot Pounds
$\frac{1}{2} \times \frac{1}{4}$	.33	$\frac{5}{8} \times \frac{1}{2}$	.82	$1 \times \frac{1}{16}$	1.49
$\frac{5}{16} \times \frac{1}{16}$	.41	$\frac{3}{4} \times \frac{5}{16}$	.62	$\frac{3}{8} \times \frac{5}{8}$	1.64
$\frac{3}{8} \times \frac{3}{8}$	.49	$\frac{3}{8} \times \frac{3}{8}$	.74	$1\frac{1}{8} \times \frac{5}{8}$	1.85
$\frac{9}{16} \times \frac{1}{4}$	.37	$\frac{3}{8} \times \frac{1}{16}$	.86	$\frac{3}{8} \times \frac{3}{4}$	2.21
$\frac{3}{8} \times \frac{1}{16}$	.46	$\frac{1}{2} \times \frac{1}{2}$	1.00	$1\frac{1}{4} \times \frac{3}{4}$	2.46
$\frac{3}{8} \times \frac{3}{8}$	.52	$\frac{7}{8} \times \frac{1}{16}$	1.00	$\frac{3}{8} \times \frac{7}{8}$	2.87
$\frac{5}{8} \times \frac{5}{16}$	.52	$\frac{1}{2} \times \frac{1}{2}$	1.15		
$\frac{3}{8} \times \frac{3}{8}$	.62	$1 \times \frac{1}{2}$	1.31		
Half Ovals	Weight Per Foot Pounds	Half Ovals	Weight Per Foot Pounds	Half Ovals	Weight Per Foot Pounds
$\frac{3}{8} \times \frac{1}{8}$	.128	$\frac{7}{8} \times \frac{5}{16}$	.724	$1\frac{3}{8} \times \frac{3}{8}$	1.45
$\frac{1}{2} \times \frac{1}{8}$	.165	$1 \times \frac{3}{16}$	.500	$1\frac{1}{2} \times \frac{3}{8}$	1.50
$\frac{5}{8} \times \frac{1}{8}$	.210	$\frac{1}{2} \times \frac{1}{4}$	.650	$\frac{1}{2} \times \frac{1}{2}$	2.00
$\frac{3}{8} \times \frac{3}{16}$	.336	$\frac{3}{8} \times \frac{5}{16}$	.830	$1\frac{3}{4} \times \frac{7}{16}$	2.05
$\frac{1}{4} \times \frac{1}{4}$	.410	$\frac{3}{8} \times \frac{3}{8}$	1.00	$\frac{1}{2} \times \frac{1}{2}$	2.30
$\frac{3}{4} \times \frac{1}{8}$	.272	$1\frac{1}{8} \times \frac{1}{4}$	.75	$2 \times \frac{1}{2}$	2.60
$\frac{3}{8} \times \frac{1}{16}$	.384	$\frac{3}{8} \times \frac{5}{16}$	.92	$2\frac{1}{2} \times \frac{5}{8}$	4.10
$\frac{1}{4} \times \frac{1}{4}$	.500	$\frac{3}{8} \times \frac{3}{8}$	1.10	$3 \times \frac{1}{2}$	4.00
$\frac{3}{8} \times \frac{1}{16}$	.620	$1\frac{1}{4} \times \frac{1}{4}$	.80	$3 \times \frac{3}{4}$	6.00
$\frac{7}{8} \times \frac{1}{16}$	.430	$\frac{1}{2} \times \frac{1}{4}$	1.00	6×1	15.80
$\frac{1}{4} \times \frac{1}{4}$	.580	$\frac{3}{8} \times \frac{3}{8}$	1.25		
Half Rounds	Weight Per Foot Pounds	Half Rounds	Weight Per Foot Pounds	Half Rounds	Weight Per Foot Pounds
$\frac{1}{4}$	.084	$\frac{3}{4}$	.751	$1\frac{1}{2}$	3.004
$\frac{5}{16}$	.131	$\frac{7}{8}$	1.022	$1\frac{3}{8}$	3.526
$\frac{3}{8}$	.188	1	1.34	$1\frac{3}{4}$	4.089
$\frac{1}{2}$	.334	$1\frac{1}{8}$	1.689	2	5.34
$\frac{9}{16}$	.422	$1\frac{1}{4}$	2.086	$2\frac{1}{2}$	8.35
$\frac{5}{8}$	.521	$1\frac{3}{8}$	2.524	3	12.02
$\frac{11}{16}$	.631				

Small Channels—Stock Sizes

Size	Weight Per Foot Pounds	Size	Weight Per Foot Pounds
$\frac{1}{2} \times \frac{1}{4} \times \frac{3}{16}$	.25	$1\frac{1}{2} \times \frac{1}{2} \times \frac{1}{8}$	1.12
$\frac{5}{8} \times \frac{1}{16} \times \frac{1}{8}$	.28	$\frac{3}{4} \times \frac{1}{16} \times \frac{3}{16}$	1.44
$\frac{3}{4} \times \frac{1}{16} \times \frac{1}{8}$	.50	$\frac{1}{2} \times \frac{3}{4} \times \frac{1}{8}$	1.17
$\frac{7}{8} \times \frac{3}{8} \times \frac{1}{8}$	.56	$1\frac{3}{4} \times \frac{5}{8} \times \frac{1}{8}$	1.33
$\frac{1}{2} \times \frac{3}{8} \times \frac{1}{8}$	.65	$2 \times \frac{1}{2} \times \frac{1}{8}$	1.47
$1 \times \frac{3}{8} \times \frac{1}{8}$	.68	$\frac{3}{8} \times \frac{5}{8} \times \frac{1}{16}$	1.98
$\frac{1}{2} \times \frac{1}{2} \times \frac{1}{8}$	.83	$\frac{1}{2} \times \frac{1}{2} \times \frac{1}{8}$	1.65
$1\frac{1}{4} \times \frac{3}{8} \times \frac{1}{8}$	.85	$\frac{1}{2} \times \frac{1}{2} \times \frac{1}{8}$	2.60
$\frac{1}{2} \times \frac{1}{2} \times \frac{1}{8}$	1.01	$2\frac{1}{4} \times \frac{1}{2} \times \frac{1}{8}$	3.60
$\frac{1}{2} \times \frac{1}{2} \times \frac{1}{8}$	1.18	$2\frac{1}{2} \times \frac{1}{2} \times \frac{1}{8}$	1.43
		$\frac{3}{8} \times \frac{5}{8} \times \frac{3}{16}$	2.27

Soft Steel Angles

Stock Sizes

Equal Legs	Weight Per Foot Pounds	Equal Legs	Weight Per Foot Pounds
$\frac{1}{2} \times \frac{1}{2} \times \frac{3}{32}$	.29	$2\frac{1}{2} \times 2\frac{1}{2} \times \frac{1}{8}$	2.08
$\frac{5}{8} \times \frac{5}{8} \times \frac{1}{8}$	.38	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	3.07
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	.48	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	4.10
$\frac{7}{8} \times \frac{7}{8} \times \frac{1}{8}$	.59	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	5.00
$1 \times 1 \times \frac{1}{8}$	.84	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	5.90
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	.70	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	7.70
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	.80	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	2.50
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	1.16	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	3.71
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	1.49	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	4.90
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	1.01	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	6.10
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	1.48	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	7.20
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	1.92	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	9.40
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	1.23	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	5.80
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	1.80	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	7.20
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	2.34	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	8.50
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	2.86	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	11.10
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	3.35	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	6.60
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	1.44	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	8.20
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	2.12	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	9.80
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	2.77	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	12.80
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	3.39	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	15.70
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	1.65	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	18.50
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	2.44	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	10.30
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	3.19	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	12.30
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	3.92	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	16.20
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	4.70	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	14.90
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	6.00	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	19.60
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	2.75	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	24.20
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	3.62	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	28.70
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	4.50	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	26.40
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	5.30		
Unequal Legs	Weight Per Foot Pounds	Unequal Legs	Weight Per Foot Pounds
$1 \times \frac{5}{8} \times \frac{1}{8}$	.64	$3\frac{1}{2} \times 3 \times \frac{5}{16}$	6.60
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	.70	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	7.90
$1\frac{3}{8} \times \frac{7}{8} \times \frac{1}{8}$	.91	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	10.20
$1\frac{1}{2} \times 1 \times \frac{3}{32}$	1.70	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	5.80
$2 \times 1\frac{1}{4} \times \frac{1}{16}$	1.96	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	7.20
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	2.55	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	8.50
$2 \times 1\frac{1}{2} \times \frac{1}{16}$	2.12	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	11.10
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	2.77	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	7.70
$2\frac{1}{4} \times 1\frac{1}{2} \times \frac{1}{16}$	2.28	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	9.10
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	2.98	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	11.90
$2\frac{1}{2} \times 1\frac{1}{2} \times \frac{1}{16}$	2.44	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	7.70
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	3.19	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	9.10
$2\frac{1}{2} \times 2 \times \frac{1}{16}$	2.75	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	11.90
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	3.62	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	8.20
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	4.50	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	9.80
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	5.30	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	12.80
$3 \times 2 \times \frac{3}{16}$	3.07	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	8.70
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	4.10	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	10.40
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	5.00	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	13.60
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	5.90	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	11.00
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	7.70	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	14.50
$3 \times 2\frac{1}{2} \times \frac{1}{16}$	4.50	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	11.70
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	5.60	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	15.30
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	6.60	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	12.30
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	8.50	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	16.20
$3\frac{1}{2} \times 2\frac{1}{2} \times \frac{1}{16}$	4.90	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	20.00
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	6.10	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	23.60
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	7.20	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	15.00
$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	9.40	$\frac{3}{4} \times \frac{3}{4} \times \frac{1}{8}$	23.00
$3\frac{1}{2} \times 3 \times \frac{1}{4}$	5.40		

Weights and Dimensions of Steel I-Beams

Size Inches	Weight Per Foot Pounds	Width of Flange Inches	Thickness of Web Inch	Size Inches	Weight Per Foot Pounds	Width of Flange Inches	Thickness of Web Inch	Size Inches	Weight Per Foot Pounds	Width of Flange Inches	Thickness of Web Inch
3	5.50	2.33	.17	7	15.00	3.66	.25	10	25.	4.66	.31
	6.50	2.42	.26		17.50	3.76	.35		30.	4.80	.45
	7.50	2.52	.36		20.	3.87	.46		35.	4.95	.60
4	7.50	2.66	.19	8	17.75	4.00	.27	12	40.	5.10	.60
	8.50	2.73	.26		20.25	4.09	.36		31.50	5.00	.35
	9.50	2.80	.33		22.75	4.18	.45		35.	5.08	.43
5	10.50	2.88	.41	9	25.25	4.27	.54		40.	5.20	.55
	9.75	3.00	.21		21.	4.33	.29	12	40.	5.25	.46
	12.25	3.14	.35		25.	4.46	.42		45.	5.37	.58
6	14.75	3.29	.50	12	30.	4.62	.58		50.	5.49	.70
	12.25	3.33	.23		35.	4.78	.74		55.	5.61	.82
	14.75	3.45	.35								
	17.25	3.57	.47								

Soft Steel Tees

Stock Sizes

Equal Legs			Equal Legs		
Table	Stem	Thick- ness	Table	Stem	Thick- ness
$\frac{3}{4}$ x $\frac{3}{4}$ x $\frac{1}{8}$		.61	$2\frac{1}{4}$ x $2\frac{1}{4}$ x $\frac{1}{4}$		4.10
1 x 1 x $\frac{1}{8}$		.85	$2\frac{1}{2}$ x $2\frac{1}{2}$ x $\frac{1}{4}$		4.61
	x $\frac{3}{16}$	1.20		x $\frac{5}{16}$	5.50
$1\frac{1}{4}$ x $1\frac{1}{4}$ x $\frac{1}{8}$		1.09		x $\frac{3}{8}$	6.40
	x $\frac{3}{16}$	1.55	3 x 3 x $\frac{1}{4}$		5.50
$1\frac{1}{2}$ x $1\frac{1}{2}$ x $\frac{3}{16}$		1.90		x $\frac{5}{16}$	6.70
	x $\frac{1}{4}$	2.43		x $\frac{3}{8}$	7.80
$1\frac{3}{4}$ x $1\frac{3}{4}$ x $\frac{3}{16}$		2.26		x $\frac{1}{2}$	9.90
	x $\frac{1}{4}$	2.90	$3\frac{1}{2}$ x $3\frac{1}{2}$ x $\frac{3}{8}$		9.20
2 x 2 x $\frac{3}{16}$		2.91	4 x 4 x $\frac{3}{8}$		10.50
	x $\frac{1}{4}$	3.56		x $\frac{1}{2}$	13.50
	x $\frac{5}{16}$	4.30			

Spring Steel

Stock Sizes

Size	Weight Per Foot Pounds	Size	Weight Per Foot Pounds
$\frac{1}{4}$ round	.167	$1\frac{5}{8}$ x 3	1.38
$\frac{5}{16}$ round	.261	x 2	1.55
$\frac{3}{8}$ round	.376	$1\frac{3}{4}$ x 3	1.49
$\frac{7}{16}$ round	.511	x 2	1.67
$\frac{1}{2}$ round	.668	x $\frac{5}{16}$	1.86
$\frac{1}{4}$ square	.213	2 x 3	1.70
$\frac{5}{16}$ square	.332	x 2	1.91
$\frac{3}{8}$ square	.478	x $\frac{5}{16}$	2.12
$\frac{7}{16}$ square	.651	x $\frac{3}{8}$	2.55
$\frac{1}{2}$ square	.850	$2\frac{1}{4}$ x 3	1.92
$\frac{3}{4}$ x $\frac{1}{8}$	.318	x 2	2.15
x $\frac{3}{16}$	.478	x $\frac{5}{16}$	2.39
$\frac{7}{8}$ x $\frac{1}{8}$	.372	x $\frac{3}{8}$	2.87
x $\frac{3}{16}$	.558	$2\frac{1}{2}$ x 3	2.12
1 x $\frac{1}{8}$	.425	x 2	2.39
x $\frac{3}{16}$	.638	x $\frac{5}{16}$	2.65
x $\frac{1}{4}$	.850	x $\frac{3}{8}$	3.19
$1\frac{1}{8}$ x 3	.957	$2\frac{3}{4}$ x 3	2.34
x 2	1.07	x 2	2.63
$1\frac{1}{4}$ x 3	1.06	x $\frac{5}{16}$	2.92
x 2	1.12	3 x 3	2.55
$1\frac{3}{8}$ x 3	1.17	x 2	2.87
x 2	1.31	x $\frac{5}{16}$	3.19
$1\frac{1}{2}$ x 3	1.28	x $\frac{3}{8}$	3.83
x 2	1.43	$3\frac{1}{2}$ x $\frac{3}{8}$	4.47
x 1	1.59	4 x $\frac{3}{8}$	5.10

Galvanized Sheets

Stock Sizes

Gauge No.	Size	Weight Per Sheet Pounds	Gauge No.	Size	Weight Per Sheet Pounds
10 x 24 x 96		93	20 x 30 x 96		33
x 30 x 96		116	x 36 x 96		40
x 36 x 96		139	x 36 x 120		50
x 48 x 96		185	x 40 x 96		45
x 48 x 120		231	x 48 x 96		55
12 x 24 x 96		73	22 x 24 x 84		20
x 30 x 96		91	x 24 x 96		23
x 36 x 96		109	x 30 x 96		28
x 48 x 96		145	x 36 x 96		34
14 x 24 x 96		53	24 x 24 x 84		16
x 30 x 96		66	x 24 x 96		19
x 36 x 96		79	x 30 x 84		20
x 48 x 96		105	x 30 x 96		23
16 x 24 x 96		43	x 36 x 96		28
x 30 x 96		53	26 x 24 x 84		13
x 36 x 96		64	x 24 x 96		15
x 36 x 120		80	x 26 x 84		14
x 48 x 96		85	x 26 x 96		16
x 48 x 120		106	x 30 x 84		16
18 x 24 x 96		35	x 30 x 96		18
x 30 x 96		43	x 36 x 96		22
x 36 x 96		52	28 x 24 x 84		11
x 48 x 96		69	x 24 x 96		13
x 48 x 120		86	x 30 x 84		14
20 x 24 x 84		23	x 30 x 96		16
x 24 x 96		27	x 36 x 96		19

Galvanized Corrugated Sheets

Stock Sizes

Gauge No.	Size	Weight Per Sheet Pounds	Gauge No.	Size	Weight Per Sheet Pounds
20 x 84 long		29.03	24 x 84 long		20.21
x 96 long		33.18	x 96 long		23.10
x 120 long		41.45	x 120 long		28.87
22 x 84 long		24.54	26 x 84 long		15.88
x 96 long		28.05	x 96 long		18.15
x 120 long		35.06	x 120 long		22.67

Gauge No.	Size	Weight Per Sheet Pounds	Gauge No.	Size	Weight Per Sheet Pounds	Gauge No.	Size	Weight Per Sheet Pounds	Gauge No.	Size	Weight Per Sheet Pounds	Gauge No.	Size	Weight Per Sheet Pounds
28 x 24 x	84	9	16 x 32 x	96	55	12 x 46 x	96	137	$\frac{3}{16}$ x 24 x	96	122	$\frac{5}{16}$ x 36 x	120	383
x 24 x	96	10	x 34 x	96	58	x 48 x	96	143	x 24 x	120	153	x 36 x	144	459
x 30 x	84	12	x 36 x	96	62	x 48 x	120	179	x 24 x	144	184	x 40 x	96	340
x 30 x	96	13	x 36 x	120	76	x 48 x	144	214	x 26 x	96	133	x 40 x	120	425
x 36 x	96	16	x 38 x	96	65	x 50 x	96	149	x 28 x	96	143	x 40 x	144	510
			x 40 x	96	69	x 50 x	120	186	x 30 x	96	153	x 42 x	96	358
			x 40 x	120	85	x 54 x	96	164	x 30 x	120	191	x 42 x	120	447
26 x 24 x	96	13	x 42 x	96	71	x 54 x	120	201	x 30 x	144	229	x 42 x	144	536
x 30 x	96	15	x 42 x	120	89	x 54 x	144	241	x 32 x	96	163	x 48 x	96	409
x 36 x	96	19	x 44 x	96	77	x 60 x	96	179	x 34 x	96	174	x 48 x	120	511
			x 46 x	96	79	x 60 x	120	224	x 36 x	96	184	x 48 x	144	613
24 x 24 x	96	17	x 48 x	96	82	x 60 x	144	268	x 36 x	120	230	x 54 x	96	459
x 26 x	96	18	x 48 x	120	102				x 36 x	144	276	x 54 x	120	574
x 28 x	96	19	x 50 x	96	86				x 40 x	96	204	x 54 x	144	689
x 30 x	96	21	x 50 x	120	106	10 x 24 x	96	91	x 40 x	120	255	x 60 x	96	510
x 36 x	96	25	x 54 x	96	92	x 24 x	120	115	x 40 x	144	306	x 60 x	120	638
			x 54 x	120	115	x 24 x	144	138	x 42 x	96	215	x 60 x	144	766
						x 26 x	96	100	x 42 x	120	268			
22 x 24 x	96	21				x 28 x	96	107	x 42 x	144	322			
x 26 x	96	22				x 30 x	96	115	x 44 x	96	225	$\frac{3}{8}$ x 24 x	96	245
x 28 x	96	24	14 x 24 x	96	51	x 30 x	120	143	x 44 x	120	281	x 24 x	120	306
x 30 x	96	26	x 24 x	120	64	x 30 x	144	173	x 48 x	96	245	x 24 x	120	369
x 32 x	96	28	x 26 x	96	56	x 32 x	96	123	x 48 x	120	306	x 30 x	96	307
x 36 x	96	31	x 28 x	96	60	x 34 x	96	131	x 48 x	144	368	x 30 x	120	383
			x 30 x	96	64	x 36 x	96	138	x 54 x	96	275	x 30 x	144	460
			x 30 x	120	79	x 36 x	120	172	x 54 x	120	344	x 40 x	96	408
20 x 24 x	96	25	x 32 x	96	69	x 36 x	144	217	x 54 x	144	458	x 40 x	120	510
x 24 x	120	31	x 34 x	96	73	x 38 x	96	146	x 60 x	96	314	x 40 x	144	612
x 26 x	96	27	x 36 x	96	77	x 40 x	96	153	x 60 x	120	382	x 42 x	96	429
x 28 x	96	29	x 36 x	120	96	x 40 x	120	191	x 60 x	144	458	x 42 x	120	536
x 30 x	96	31	x 38 x	96	82							x 42 x	144	643
x 30 x	120	38	x 40 x	96	86							x 48 x	96	490
x 32 x	96	33	x 40 x	120	106				$\frac{1}{4}$ x 24 x	96	163	x 48 x	120	612
x 36 x	96	37	x											

Hoops and Bands—Soft Steel

Stock Sizes

Size	Weight Per Foot Pound	Size	Weight Per Foot Pounds	Size	Weight Per Foot Pounds
$\frac{3}{8} \times 16$	.0829	$1 \times \frac{3}{16}$	.6375	$2 \times \frac{3}{16}$	1.275
x 14	.1058	$1\frac{1}{8} \times 18$	.1874	$2\frac{1}{4} \times 16$	.4973
x 12	.139	x 16	.2486	x 14	.635
x 10	.1709	x 14	.3175	x 12	.8339
$x \frac{3}{16}$	.2391	x 12	.4169	x 10	1.0251
$\frac{1}{2} \times 24$	.0374	x 10	.5126	x 8	1.2623
x 22	.0476	$x \frac{3}{16}$	.7172	$x \frac{3}{16}$	1.4344
x 20	.0595	$1\frac{1}{4} \times 22$	.119	$2\frac{1}{2} \times 16$	.5525
x 18	.0833	x 20	.1488	x 14	.7055
x 16	.1105	x 18	.2083	x 12	.9265
x 14	.1411	x 17	.2465	x 10	1.139
x 12	.1853	x 16	.2763	x 8	1.4025
x 10	.2278	x 14	.3528	$x \frac{3}{16}$	1.5938
$x \frac{3}{16}$	.3188	x 12	.4633	$2\frac{3}{4} \times 12$	1.0192
$\frac{5}{8} \times 22$	.0595	x 10	.5695	x 10	1.2529
x 20	.0744	$x \frac{3}{16}$	.7969	$x \frac{3}{16}$	1.7531
x 18	.1041	$1\frac{3}{8} \times 16$	.3039	3×16	.663
x 16	.1381	x 10	.6265	x 14	.8466
x 14	.1764	$x \frac{3}{16}$	.8766	x 12	1.1118
x 12	.2316	$1\frac{1}{2} \times 22$	.1428	x 10	1.3668
x 10	.2848	x 20	.1785	x 8	1.683
$x \frac{3}{16}$	.3984	x 18	.2499	$x \frac{3}{16}$	1.9125
$\frac{3}{4} \times 22$	.0714	x 17	.2958	$3\frac{1}{4} \times 10$	1.4807
x 20	.0893	x 16	.3315	$3\frac{1}{2} \times 16$	.7735
x 18	.125	x 15	.3672	x 14	.9877
x 16	.1658	x 14	.4233	x 12	1.2971
x 14	.2117	x 12	.5559	x 10	1.5946
x 12	.278	x 10	.6834	x 8	1.9635
x 10	.3417	x 8	.8415	$x \frac{3}{16}$	2.2313
$x \frac{3}{16}$	.4781	$x \frac{3}{16}$	.9563	4×16	.884
$\frac{7}{8} \times 22$	.0833	$1\frac{3}{4} \times 18$	.2916	x 14	1.1288
x 20	.1041	x 17	.3451	x 12	1.4824
x 18	.1458	x 16	.3868	x 10	1.8224
x 16	.1934	x 15	.4284	x 8	2.244
x 14	.2469	x 14	.4939	$x \frac{3}{16}$	2.550
x 12	.3243	x 12	.6486	$4\frac{1}{2} \times 10$	2.0502
x 10	.3987	x 10	.7973	$x \frac{3}{16}$	2.8688
$x \frac{3}{16}$	.5578	x 8	.9818	5×16	1.105
1×22	.0952	$x \frac{3}{16}$	1.1156	x 14	1.411
x 20	.119	2×18	.3332	x 10	2.278
x 19	.1428	x 16	.4420	$x \frac{3}{16}$	3.1875
x 18	.1666	x 15	.4896	$5\frac{1}{2} \times 10$	2.5058
x 16	.221	x 14	.5644	6×16	1.326
x 14	.2822	x 12	.7412	x 14	1.6932
x 12	.3706	x 10	.9112	x 10	2.7336
x 10	.4556	x 8	1.122	$x \frac{3}{16}$	3.825

An assortment of sizes Galvanized in stock.

Norway Iron

Stock Sizes

Rounds	Weight Per Foot Pounds	Rounds	Weight Per Foot Pounds	Rounds	Weight Per Foot Pounds
$\frac{3}{16}$	.092	$\frac{1}{8}$	1.237	$1\frac{5}{8}$	6.913
$\frac{1}{4}$	.164	$\frac{3}{4}$	1.473	$1\frac{3}{4}$	8.018
$\frac{5}{16}$	.256	$\frac{7}{8}$	2.004	$1\frac{7}{8}$	9.204
$\frac{3}{8}$	.368	1	2.618	2	10.47
$\frac{7}{16}$	.501	$1\frac{1}{8}$	3.313	$2\frac{1}{8}$	11.82
$\frac{1}{2}$	.654	$1\frac{1}{4}$	4.091	$2\frac{1}{4}$	13.25
$\frac{9}{16}$	.828	$1\frac{3}{8}$	4.950	$2\frac{1}{2}$	16.36
$\frac{5}{8}$	1.023	$1\frac{1}{2}$	5.890	3	23.56
Squares	Weight Per Foot Pounds	Squares	Weight Per Foot Pounds	Squares	Weight Per Foot Pounds
$\frac{1}{4}$	.208	$\frac{3}{4}$	1.875	$1\frac{5}{8}$	8.802
$\frac{5}{16}$	.326	$\frac{7}{8}$	2.552	$1\frac{3}{4}$	10.21
$\frac{3}{8}$	.469	1	3.333	2	13.33
$\frac{7}{16}$	.638	$1\frac{1}{8}$	4.219	$2\frac{1}{4}$	16.88
$\frac{1}{2}$	.833	$1\frac{1}{4}$	5.208	$2\frac{1}{2}$	20.83
$\frac{9}{16}$	1.055	$1\frac{3}{8}$	6.302	3	30.00
$\frac{5}{8}$	1.302	$1\frac{1}{2}$	7.500		
Flats	Weight Per Foot Pounds	Flats	Weight Per Foot Pounds	Flats	Weight Per Foot Pounds
$\frac{1}{2} \times \frac{1}{8}$	.209	$1 \times \frac{5}{16}$	1.04	$1\frac{3}{4} \times \frac{1}{4}$	1.46
$x \frac{3}{16}$	.313	$x \frac{3}{8}$	1.25	$x \frac{3}{8}$	2.19
$x \frac{1}{4}$	.416	$x \frac{1}{2}$	1.67	$x \frac{1}{2}$	2.92
$x \frac{3}{8}$	.625	$x \frac{5}{8}$	2.08	$x \frac{5}{8}$	3.65
$\frac{5}{8} \times \frac{1}{8}$	.27	$x \frac{3}{4}$	2.50	$x \frac{3}{4}$	4.38
$x \frac{3}{16}$	.40	$x \frac{7}{8}$	2.92	$x \frac{7}{8}$	5.10
$x \frac{1}{4}$	.53	$1\frac{1}{8} \times \frac{1}{2}$	1.87	x 1	5.83
$x \frac{5}{16}$	.66	$x \frac{5}{8}$	2.34	$2 \times \frac{1}{4}$	1.67
$x \frac{3}{8}$	.79	$x \frac{3}{4}$	2.81	$x \frac{3}{8}$	2.50
$x \frac{1}{2}$	1.05	$x \frac{7}{8}$	3.28	$x \frac{1}{2}$	3.33
$\frac{3}{4} \times \frac{1}{8}$	.32	$1\frac{1}{4} \times \frac{1}{4}$	1.04	$x \frac{5}{8}$	4.17
$x \frac{3}{16}$	.48	$x \frac{5}{16}$	1.30	$x \frac{3}{4}$	5.00
$x \frac{1}{4}$	.63	$x \frac{3}{8}$	1.56	$x \frac{7}{8}$	5.83
$x \frac{5}{16}$	.79	$x \frac{1}{2}$	2.08	x 1	6.67
$x \frac{3}{8}$	.95	$x \frac{5}{8}$	2.60	$2\frac{1}{2} \times \frac{3}{8}$	3.13
$x \frac{1}{2}$	1.27	$x \frac{3}{4}$	3.13	$x \frac{1}{2}$	4.17
$x \frac{5}{8}$	1.57	$x \frac{7}{8}$	3.65	$x \frac{5}{8}$	5.21
$\frac{7}{8} \times \frac{1}{8}$	.37	x 1	4.17	$x \frac{3}{4}$	6.25
$x \frac{3}{16}$	.56	$1\frac{1}{2} \times \frac{1}{4}$	1.25	$x \frac{7}{8}$	7.29
$x \frac{1}{4}$	.74	$x \frac{5}{16}$	1.56	x 1	8.33
$x \frac{5}{16}$	.92	$x \frac{3}{8}$	1.88	$3 \times \frac{3}{8}$	3.75
$x \frac{3}{8}$	1.10	$x \frac{1}{2}$	2.50	$x \frac{1}{2}$	5.00
$x \frac{1}{2}$	1.48	$x \frac{5}{8}$	3.13	$x \frac{5}{8}$	6.25
$x \frac{5}{8}$	1.85	$x \frac{3}{4}$	3.75	$x \frac{3}{4}$	7.50
$1 \times \frac{3}{16}$	.625	$x \frac{7}{8}$	4.38	$x \frac{7}{8}$	8.75
$x \frac{1}{4}$	.833	x 1	5.00	x 1	10.00

Any stock size Norway Iron wanted, not mentioned above, can be furnished promptly. Special sizes Norway Rolled or Hammered can be made to order.

Cold Drawn Steel

Sizes in Stock—Random Lengths

Flat Cold Drawn

$\frac{3}{32} \times \frac{1}{4}, \frac{5}{16}, \frac{3}{8}, \frac{1}{2}, \frac{5}{8}, \frac{3}{4}, \frac{7}{8}, 1, 1\frac{1}{4}, 1\frac{1}{2}, 1\frac{3}{4}, 2.$
$\frac{1}{8} \times \left\{ \frac{3}{16}, \frac{1}{4}, \frac{5}{16}, \frac{3}{8}, \frac{7}{16}, \frac{1}{2}, \frac{9}{16}, \frac{5}{8}, \frac{11}{16}, \frac{3}{4}, \frac{13}{16}, \frac{7}{8}, \frac{15}{16}, 1, 1\frac{1}{8}, 1\frac{1}{4}, 1\frac{3}{8}, 1\frac{1}{2}, 1\frac{5}{8}, 1\frac{3}{4}, 1\frac{7}{8}, 2, 2\frac{1}{4}, 2\frac{1}{2}, 2\frac{3}{4}, 3. \right\}$
$\frac{5}{32} \times \frac{1}{8}, \frac{3}{8}, \frac{1}{2}, \frac{5}{8}, \frac{3}{4}, \frac{7}{8}, 1, 1\frac{1}{4}, 1\frac{1}{2}, 1\frac{3}{4}, 2, 2\frac{1}{2}.$
$\frac{3}{16} \times \left\{ \frac{1}{4}, \frac{5}{16}, \frac{3}{8}, \frac{7}{16}, \frac{1}{2}, \frac{9}{16}, \frac{5}{8}, \frac{3}{4}, \frac{7}{8}, 1, 1\frac{1}{8}, 1\frac{1}{4}, 1\frac{3}{8}, 1\frac{1}{2}, 1\frac{5}{8}, 1\frac{3}{4}, 1\frac{7}{8}, 2, 2\frac{1}{4}, 2\frac{1}{2}, 2\frac{3}{4}, 3. \right\}$
$\frac{1}{4} \times \left\{ \frac{5}{16}, \frac{3}{8}, \frac{7}{16}, \frac{1}{2}, \frac{9}{16}, \frac{5}{8}, \frac{3}{4}, \frac{7}{8}, 1, 1\frac{1}{8}, 1\frac{1}{4}, 1\frac{3}{8}, 1\frac{1}{2}, 1\frac{5}{8}, 1\frac{3}{4}, 2, 2\frac{1}{4}, 2\frac{1}{2}, 2\frac{3}{4}, 3, 3\frac{1}{4}, 3\frac{1}{2}, 4, 4\frac{1}{4}, 4\frac{1}{2}, 5, 5\frac{1}{2}, 6. \right\}$
$\frac{5}{16} \times \left\{ \frac{3}{8}, \frac{1}{2}, \frac{9}{16}, \frac{5}{8}, \frac{3}{4}, \frac{7}{8}, 1, 1\frac{1}{8}, 1\frac{1}{4}, 1\frac{3}{8}, 1\frac{1}{2}, 1\frac{5}{8}, 1\frac{3}{4}, 2, 2\frac{1}{4}, 2\frac{1}{2}, 2\frac{3}{4}, 3, 3\frac{1}{4}, 3\frac{1}{2}, 4, 4\frac{1}{2}, 5. \right\}$
$\frac{3}{8} \times \left\{ \frac{7}{16}, \frac{1}{2}, \frac{9}{16}, \frac{5}{8}, \frac{3}{4}, \frac{7}{8}, 1, 1\frac{1}{8}, 1\frac{1}{4}, 1\frac{3}{8}, 1\frac{1}{2}, 1\frac{5}{8}, 1\frac{3}{4}, 2, 2\frac{1}{4}, 2\frac{1}{2}, 2\frac{3}{4}, 3, 3\frac{1}{4}, 3\frac{1}{2}, 3\frac{3}{4}, 4, 4\frac{1}{2}, 5, 6. \right\}$
$\frac{7}{16} \times \left\{ \frac{1}{2}, \frac{9}{16}, \frac{5}{8}, \frac{3}{4}, \frac{7}{8}, 1, 1\frac{1}{8}, 1\frac{1}{4}, 1\frac{3}{8}, 1\frac{1}{2}, 1\frac{5}{8}, 1\frac{3}{4}, 2, 2\frac{1}{4}, 2\frac{1}{2}, 2\frac{3}{4}, 3, 4. \right\}$
$\frac{1}{2} \times \left\{ \frac{9}{16}, \frac{5}{8}, \frac{3}{4}, \frac{7}{8}, 1, 1\frac{1}{8}, 1\frac{1}{4}, 1\frac{3}{8}, 1\frac{1}{2}, 1\frac{5}{8}, 1\frac{3}{4}, 1\frac{7}{8}, 2, 2\frac{1}{4}, 2\frac{1}{2}, 2\frac{3}{4}, 3, 3\frac{1}{4}, 3\frac{1}{2}, 3\frac{3}{4}, 4, 4\frac{1}{2}, 5, 5\frac{1}{2}, 6. \right\}$
$\frac{9}{16} \times \frac{5}{8}, \frac{3}{4}, \frac{7}{8}, 1, 1\frac{1}{8}, 1\frac{1}{4}, 1\frac{1}{2}, 1\frac{3}{4}, 2.$
$\frac{5}{8} \times \left\{ \frac{11}{16}, \frac{3}{4}, \frac{7}{8}, 1, 1\frac{1}{8}, 1\frac{1}{4}, 1\frac{3}{8}, 1\frac{1}{2}, 1\frac{5}{8}, 1\frac{3}{4}, 1\frac{7}{8}, 2, 2\frac{1}{4}, 2\frac{1}{2}, 2\frac{3}{4}, 3, 3\frac{1}{4}, 3\frac{1}{2}, 3\frac{3}{4}, 4, 4\frac{1}{2}, 5, 6. \right\}$
$\frac{3}{4} \times \left\{ \frac{13}{16}, \frac{7}{8}, 1, 1\frac{1}{8}, 1\frac{1}{4}, 1\frac{3}{8}, 1\frac{1}{2}, 1\frac{5}{8}, 1\frac{3}{4}, 1\frac{7}{8}, 2, 2\frac{1}{4}, 2\frac{1}{2}, 2\frac{3}{4}, 3, 3\frac{1}{4}, 3\frac{1}{2}, 3\frac{3}{4}, 4, 4\frac{1}{2}, 5, 5\frac{1}{2}, 6. \right\}$
$\frac{7}{8} \times \left\{ 1, 1\frac{1}{8}, 1\frac{1}{4}, 1\frac{3}{8}, 1\frac{1}{2}, 1\frac{5}{8}, 1\frac{3}{4}, 1\frac{7}{8}, 2, 2\frac{1}{4}, 2\frac{1}{2}, 2\frac{3}{4}, 3, 3\frac{1}{4}, 3\frac{1}{2}, 4, 5. \right\}$
$1 \times \left\{ 1\frac{1}{8}, 1\frac{1}{4}, 1\frac{3}{8}, 1\frac{1}{2}, 1\frac{5}{8}, 1\frac{3}{4}, 1\frac{7}{8}, 2, 2\frac{1}{4}, 2\frac{1}{2}, 2\frac{3}{4}, 3, 3\frac{1}{4}, 3\frac{1}{2}, 3\frac{3}{4}, 4, 4\frac{1}{2}, 5, 6. \right\}$
$1\frac{1}{8} \times 1\frac{1}{4}, 1\frac{3}{8}, 1\frac{1}{2}, 1\frac{5}{8}, 1\frac{3}{4}, 1\frac{7}{8}, 2, 2\frac{1}{4}, 2\frac{3}{8}, 2\frac{1}{2}, 3, 3\frac{1}{2}.$
$1\frac{1}{4} \times \left\{ 1\frac{3}{8}, 1\frac{1}{2}, 1\frac{5}{8}, 1\frac{3}{4}, 1\frac{7}{8}, 2, 2\frac{1}{4}, 2\frac{1}{2}, 2\frac{3}{4}, 3, 3\frac{1}{2}, 4, 5. \right\}$
$1\frac{1}{2} \times 1\frac{5}{8}, 1\frac{3}{4}, 1\frac{7}{8}, 2, 2\frac{1}{4}, 2\frac{1}{2}, 2\frac{3}{4}, 3, 3\frac{1}{2}, 4, 4\frac{1}{2}, 5, 6.$
$1\frac{3}{4} \times 1\frac{7}{8}, 2, 2\frac{1}{4}, 2\frac{1}{2}, 2\frac{3}{4}, 3, 4.$
$2 \times 2\frac{1}{4}, 2\frac{1}{2}, 3, 3\frac{1}{2}, 4.$
$2\frac{1}{2} \times 2\frac{3}{4}, 3, 3\frac{1}{4}, 3\frac{1}{2}.$

Round Screw Steel

$\frac{3}{32}, \frac{1}{8}, \frac{5}{32}, \frac{3}{16}, \frac{7}{32}, \frac{1}{4}, \frac{9}{32}, \frac{5}{16}, \frac{11}{32}, \frac{3}{8}, \frac{13}{32}, \frac{7}{16}, \frac{15}{32}, \frac{1}{2}, \frac{9}{16}, \frac{5}{8}, \frac{11}{16}, \frac{3}{4}, \frac{13}{16}, \frac{7}{8}, \frac{15}{16}, 1, 1\frac{1}{16}, 1\frac{1}{8}, 1\frac{1}{4}.$

Hexagon Screw Steel

$\frac{3}{16}, \frac{1}{4}, \frac{5}{16}, \frac{3}{8}, \frac{7}{16}, \frac{1}{2}, \frac{9}{16}, \frac{5}{8}, \frac{11}{16}, \frac{3}{4}, \frac{13}{16}, \frac{7}{8}, \frac{15}{16}, 1.$

Hexagon Cold Drawn

$1\frac{1}{8}, 1\frac{1}{4}, 1\frac{3}{8}, 1\frac{1}{2}, 1\frac{5}{8}, 1\frac{3}{4}, 1\frac{7}{8}, 2, 2\frac{1}{4}, 2\frac{1}{2}, 2\frac{3}{4}, 3.$

Square Screw Steel

$\frac{3}{32}, \frac{1}{8}, \frac{5}{32}, \frac{3}{16}, \frac{7}{32}, \frac{1}{4}, \frac{9}{32}, \frac{5}{16}, \frac{11}{32}, \frac{3}{8}, \frac{13}{32}, \frac{7}{16}, \frac{15}{32}, \frac{1}{2}, \frac{9}{16}, \frac{5}{8}, \frac{11}{16}, \frac{3}{4}, \frac{13}{16}, \frac{7}{8}, \frac{15}{16}, 1.$

Square Cold Drawn

$1\frac{1}{16}, 1\frac{1}{8}, 1\frac{1}{4}, 1\frac{3}{8}, 1\frac{1}{2}, 1\frac{5}{8}, 1\frac{3}{4}, 1\frac{7}{8}, 2, 2\frac{1}{4}, 2\frac{1}{2}, 2\frac{3}{4}, 3.$

Round Edge Tire—Iron and Steel

Sizes in Stock

Size	Weight Per Foot Pounds	Size	Weight Per Foot Pounds	Size	Weight Per Foot Pounds
$1\frac{1}{2} \times \frac{1}{2}$	2.89	$1\frac{3}{4} \times \frac{3}{4}$	5.00	$2\frac{1}{4} \times \frac{7}{8}$	7.40
$\times \frac{9}{16}$	3.33	$1\frac{7}{8} \times \frac{3}{4}$	5.39	$\times 1$	8.36
$\times \frac{5}{8}$	3.58	$2 \times \frac{5}{8}$	4.90	$2\frac{3}{8} \times 1$	8.95
$1\frac{5}{8} \times \frac{1}{2}$	3.06	$\times \frac{3}{4}$	5.58	$2\frac{1}{2} \times \frac{7}{8}$	8.08
$\times \frac{9}{16}$	3.42	$\times \frac{7}{8}$	6.73	$\times 1$	9.52
$\times \frac{5}{8}$	3.89	$\times 1$	7.79	$2\frac{5}{8} \times 1$	9.80
$\times \frac{3}{4}$	4.73	$2\frac{1}{8} \times \frac{3}{4}$	5.96	$2\frac{3}{4} \times 1$	10.38
$1\frac{3}{4} \times \frac{1}{2}$	3.27	$\times \frac{7}{8}$	7.11	$3 \times \frac{7}{8}$	9.52
$\times \frac{9}{16}$	3.73	$2\frac{1}{4} \times \frac{3}{4}$	6.44	$\times 1$	11.15
$\times \frac{5}{8}$	4.21				

Diamond Pattern Floor Plates

Sizes in Stock

Size	Estimated Weight Per Sheet Pounds	Size	Estimated Weight Per Sheet Pounds
$\frac{1}{8} \times 24 \times 96$	128	$\frac{1}{4} \times 36 \times 120$	338
$\times 24 \times 120$	160	$\times 48 \times 96$	360
$\times 30 \times 96$	160	$\times 48 \times 120$	450
$\times 30 \times 120$	200	$\frac{5}{16} \times 24 \times 96$	220
$\times 36 \times 96$	192	$\times 24 \times 120$	275
$\times 36 \times 120$	240	$\times 30 \times 96$	275
$\frac{3}{16} \times 24 \times 96$	140	$\times 30 \times 120$	344
$\times 24 \times 120$	175	$\times 36 \times 96$	330
$\times 30 \times 96$	175	$\times 36 \times 120$	413
$\times 30 \times 120$	219	$\times 48 \times 96$	440
$\times 36 \times 96$	210	$\times 48 \times 120$	550
$\times 36 \times 120$	263	$\frac{3}{8} \times 24 \times 96$	260
$\times 48 \times 96$	280	$\times 24 \times 120$	325
$\times 48 \times 120$	350	$\times 30 \times 96$	325
$\frac{1}{4} \times 24 \times 96$	180	$\times 30 \times 120$	407
$\times 24 \times 120$	225	$\times 36 \times 96$	390
$\times 30 \times 96$	225	$\times 36 \times 120$	488
$\times 30 \times 120$	282	$\times 48 \times 96$	520
$\times 36 \times 96$	270	$\times 48 \times 120$	650

Weights per sheet are based on the theoretical weights per square foot as follows:

Thickness, inch....	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{1}{2}$
Per square ft., lbs..	8	$8\frac{3}{4}$	$11\frac{1}{4}$	$13\frac{3}{4}$	$16\frac{1}{4}$	$21\frac{1}{2}$

Forbes Pipe Cutting and Threading Machine

For Hand Power



Fig. 4280. No. 56

Hand machine consists of a die-carrying gear surrounded and supported by a shell with a self-centering pipe vise attached to the rear, a pinion or small gear imbedded in its side, meshing in the die gear, and a face plate by which the dies are adjusted. The pipe is inserted through the self-centering vise at the back, with the end to be threaded inserted into the lead of the dies, and is clamped and brought central with the dies by turning the hand wheel shown on top of the machine. The die-carrying gear is then revolved by means of the pinion, and power is applied by crank with which the machine is provided.

As the dies revolve, a slight pressure on the top lever forces the gear back into the shell and leads the dies on to the pipe. When the thread is cut the required length the face plate is turned to the left, which withdraws the dies, and the pipe removed.

No.	Range	Approximate Net Weight Pounds	Price	No.	Range	Approximate Net Weight Pounds	Price
*30	¼ to 2 inch, both Right and Left	155	170.00	*60	1 to 6 inches, R. and L.	404	785.00
*32	¼ to 2 inch, for solid dies (without dies)	140	150.00	*61	2½ to 6 inches, R. and L.	398	685.00
*34	1 to 3 inch, R. H., 1 to 2 inch L. H.	185	250.00	†62	2½ to 6 inches, R. and L. (extra heavy)	815	1000.00
*36	¾ to 3 inch, R. H., ¾ to 2 inch, L. H.	190	285.00	*62½	1 to 6 inches, R. and L.	845	1170.00
*37	¼ to 3 inches, R. and L.	200	350.00	*63	2½ to 8 inches, R. and L.	661	1200.00
*38	1½ to 4 inches, R. H.	251	335.00	†64	2½ to 8 inches, R. H.	673	1085.00
*40	1½ to 4 inches, R. and L.	257	385.00	*65	1 to 8 inches, R. H.	671	1200.00
*42	1 to 4 inches, R. H.	253	370.00	*65½	1 to 8 inches, R. and L.	660	1320.00
*44	1 to 4 inches, R. and L.	260	435.00	†66	2½ to 10 inches, R. H.	989	1670.00
†46	2½ to 4 inches, R. H.	237	285.00	*67	2½ to 10 inches, R. H.	995	1670.00
†50	4 to 6 inches, R. H.	341	385.00	*68	2½ to 10 inches, R. and L.	1025	1835.00
†52	3½ to 6 inches, R. H.	341	435.00	†69	2½ to 12 inches, R. H.	2293	2170.00
†54	2½ to 5 inches, R. H.	343	500.00	*69½	2½ to 12 inches, R. and L.	2525	2500.00
†56	2½ to 6 inches, R. H.	345	585.00	†69¾	4 I. D. to 15 inches O. D., R. H.	2647	3335.00
*58	1 to 6 inches, R. H.	384	635.00				

*Pressure feed machine.

†Lead screw machine.

Nos. 30 to 37 have no cut-off attachment unless specially ordered.

Weights are net without boxing, and are not guaranteed, as they will vary somewhat.

Forbes Pipe Cutting and Threading Machine

For Hand and Power Use

An adaptation of the Hand Machine above described, arranged for either hand or power use.

Consists of the regular hand machine supplied with a power base, elongated pinion, gearing, countershaft and oil pump, etc., and the machine can be taken from the base and carried on outside work as a hand machine.

Designed to stand on the end of a bench, thus giving great economy of space, and allowing a length of pipe to be handled in much smaller space than is required with other designs.

We can furnish a stand, when desired, for either hand or power machines, at 15.00.

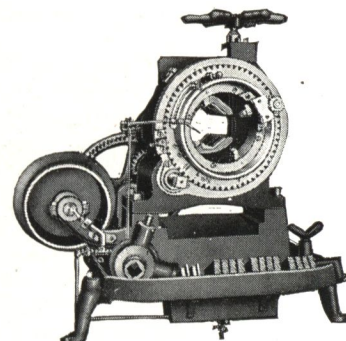


Fig. 4281. No. 94

No.	Range	Approximate Net Weight Pounds	Price	No.	Range	Approximate Net Weight Pounds	Price
*70	¼ to 2 inch, R. and L.	376	335.00	†94	2½ to 6 inches, R. H.	800	850.00
*72	¼ to 2 inch, for solid dies (without dies)	352	320.00	*95	2½ to 6 inches, R. and L.	818	850.00
*74	1 to 3 inch, R. H., 1 to 2 inch, L. H.	491	420.00	*96	1 to 6 inches, R. H.	860	835.00
*76	¾ to 3 inches, R. H., ¾ to 2 inch, L. H.	484	450.00	*98	1 to 6 inches, R. and L.	881	950.00
*77	¼ to 3 inches, R. and L.	490	520.00	*98½	1 to 8 inches, R. H.	1359	1785.00
†78	2½ to 4 inches, R. H.	652	470.00	*99	2½ to 8 inches, R. and L.	1326	1785.00
†80	1½ to 4 inches, R. H.	644	500.00	*99½	1 to 8 inches, R. and L.	1370	1900.00
*82	1½ to 4 inches, R. and L.	665	550.00	†100	2½ to 8 inches, R. H.	1500	1670.00
*84	1 to 4 inches, R. H.	662	535.00	†102	2½ to 10 inches, R. H.	2025	2335.00
*86	1 to 4 inches, R. and L.	648	600.00	*104	2½ to 10 inches, R. H.	2150	2335.00
†88	4 to 6 inches, R. H.	758	570.00	*106	2½ to 10 inches, R. and L.	2200	2500.00
†90	3½ to 6 inches, R. H.	802	600.00	†107	2½ to 12 inches, R. and L.	3725	3000.00
†92	2½ to 5 inches, R. H.	810	670.00	*108	2½ to 12 inches, R. and L.	4156	3335.00

*Pressure feed machine.

†Lead screw machine.

Nos. 70 to 77 have no cut-off attachment unless especially ordered.

The prices include counter-shaft, ratchet-wrench and pipe rest.

Weights given are net without boxing, and are not guaranteed, as they will vary somewhat.

Forbes Heavy Type Mill Machines

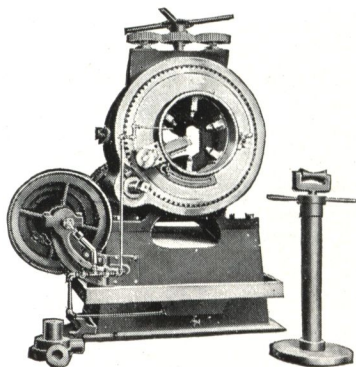


Fig. 4290. No. 120

These machines are designed for the heaviest kind of work, and are built with a solid base to stand on the floor.

They are so heavily geared that pipe even as large as 15-inch can be threaded by one man by hand with ease.

Dies are adjustable so that a thread can be cut larger or smaller than standard to allow for any variations of the fittings.

They are complete and self-contained, no extra vise being required, and as the self-centering vise is an integral part of the machine, accurate threads are always insured.

Cutting-off attachment is automatic in its feed, cuts the pipe square and leaves no burr. Can be used either as power machines in shop or taken from base and operated as hand machine on outside work.

Prices include countershaft and one full set of dies and cut-off tools. Machines are supplied with oil pumps, and have the base so constructed that it forms a pan around the machine, in the center of which is located a strainer to separate the oil from the chips.

No.	Range	Approximate Net Weight Pounds	Floor Space Inches	Price
*109	1—6 inches R. H.	2000	27 x 43	1370.00
†110	2½—6 inches R. H.	2254	25 x 28	1335.00
*111	1—6 inches R. & L.	1920	27 x 43	1435.00
†112	2½—8 inches R. H.	2525	28 x 45	2170.00
*114	2½—8 inches R. & L.	2725	28 x 45	2500.00
†120	4 I. D. to 15 inches O. D., R. H.	5990	38 x 60	5000.00

*Pressure feed machine.

†Lead screw machine.

Motor Driven Pipe Cutting and Threading Machines

The No. 258 Machine as illustrated, having a range from 1 to 6 inch, R. H., is typical of the line. Machines of other ranges differ principally in size. Machines including more than one pitch of thread in their range, or for both right and left threads, are made with a pressure feed instead of a lead screw.

The compact cabinet base requires no more room than a bench machine. The motor is concealed within the base, protecting it from oil and chips, also from breakage resulting from dropping heavy lengths of pipe and fittings. No outside bearings to be lined up, as no belting or countershaft is used. A trolley over the machine for handling heavy lengths of pipe can be used to good advantage. Power always available for night work.

The machine has triple compound spur gears cut from solid castings and entirely protected. Various speeds obtained by lever control. Direct-connected Oil Pump.

Machine can be taken from its base and used as a hand machine.

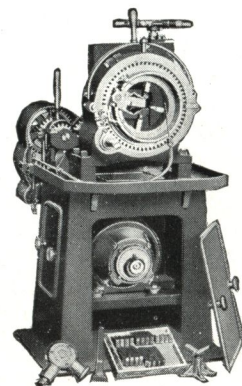


Fig. 4291. No. 258

No.	Range	Approximate Weight Pounds	Price	No.	Range	Approximate Weight Pounds	Price
*230	¼ to 2 inch R. & L. H.	846	1050.00	†252	3½—6 inch R. H.	1304	1450.00
*234	1—3 inch R. H., 1—2 inch L. H.	891	1135.00	†254	2½—5 inch R. H.	1306	1450.00
*236	¾—3 inch R. H., ¾—2 inch L. H.	896	1170.00	†256	2½—6 inch R. H.	1309	1535.00
*237	¼—3 inch R. & L. H.	1050	1235.00	*258	1—6 inch R. H.	1371	1585.00
*238	1½—4 inch R. H.	1118	1220.00	*260	1—6 inch R. & L. H.	1391	1735.00
*240	1½—4 inch R. & L. H.	1126	1270.00	†264	2½—8 inch R. H.	1817	2335.00
*242	1—4 inch R. H.	1120	1250.00	*265	1—8 inch R. H.	1830	2420.00
*244	1—4 inch R. & L. H.	1130	1320.00	*267	2½—10 inch R. H.	2500	3000.00
†246	2½—4 inch R. H.	1118	1200.00	†269	2½—12 inch R. H.	3646	4000.00
†250	4—6 inch R. H.	1304	1420.00				

*Pressure feed.

†Lead screw machine.

The above prices are based on the supposition that the motor is intended for the ordinary current, such as D. C., or 2 or 3 phase A. C., while if it is for single phase A. C., or motors to Government specifications there will be an additional charge to the above mentioned price.

Beaver Die Stocks

No. 6 Beaverette

Threads $\frac{1}{4}$ to $\frac{3}{4}$ inch without changing dies. The two sets of dies covering the two thread pitches are operated by a single handle.

Beaverettes have a strong three-jaw centering device, which does away with loose bushings.

No. 6. $\frac{1}{4}$ to $\frac{3}{4}$ -inch Beaverette, each..... 15.00

Extra dies, R. H. or L. H.:

$\frac{1}{8}$ -inch..... 3.00
 $\frac{1}{4}$ to $\frac{3}{8}$ -inch..... 3.00
 $\frac{1}{2}$ to $\frac{3}{4}$ -inch..... 3.00

Shipping weight, 10 pounds.

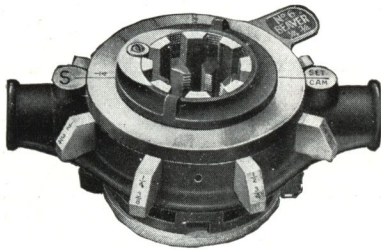


Fig. 4300. Beaverette, No. 6

No. 25 Beaver Die Stock

Threads all sizes, 1, $1\frac{1}{4}$, $1\frac{1}{2}$ and 2-inch, standard or variation from standard, without changing dies. It has universal chuck that centers all sizes, eliminating bushings and grip screws.

No. 25 complete..... 30.00
 Extra Dies, Right Hand..... 3.50
 Shipping Weight, boxed, pounds..... 25



Fig. 4301. No. 25

No. 26 Beaver Ratchet Die Stock

Similar in construction to No. 25 and threads all sizes, 1, $1\frac{1}{4}$, $1\frac{1}{2}$ and 2-inch, standard or variation from standard, without changing dies, has universal chuck for centering the pipe. Intended especially for threading pipe in ditches and confined places. Can also be used as a regular stock.

No. 26, complete..... 35.00
 Extra Dies, Right Hand..... 3.50
 Shipping Weight, boxed, pounds..... 30

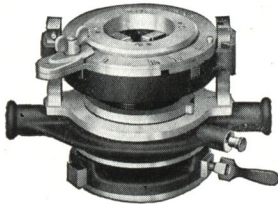


Fig. 4302. No. 26 Ratchet

No. 41 Beaver Die Stock

Threads all sizes, $2\frac{1}{2}$, 3, $3\frac{1}{2}$ and 4-inch, standard or variations from standard, without changing dies. Steel and malleable iron construction makes it strong and durable. Gears are cut steel and in addition are covered, which protects the tool as well as the operator. Bushings and tool steel grip screws are used. A thread can be cut in a ditch as well as at the bench.

No. 41 Beaver Die Stock, complete..... 110.00
 Extra Dies, $2\frac{1}{2}$ to 4-inch, One Set, per set..... 9.00
 Shipping Weight, pounds..... 100

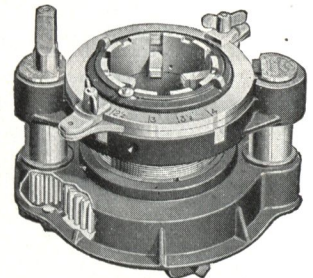


Fig. 4303. No. 41 Beaver

No. 61 Beaver Die Stock

Threads all sizes $2\frac{1}{2}$, 3, $3\frac{1}{2}$, 4, $4\frac{1}{2}$, 5 and 6-inch, standard or variations from standard, and is of same construction as the No. 41, except that it has two sets of dies to cover unusual wide range.

One set cuts $2\frac{1}{2}$, 3 and $3\frac{1}{2}$ -inch. Other set cuts 4, $4\frac{1}{2}$, 5 and 6-inch.

Can be operated by one man.

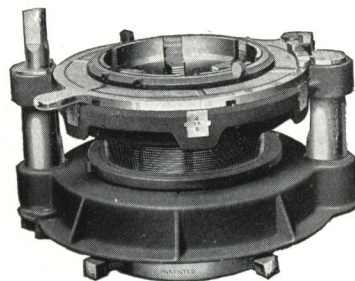


Fig. 4304. No. 61 Beaver

No. 61 Beaver Die Stock, complete..... 220.00
 Extra Dies, $2\frac{1}{2}$, 3 and $3\frac{1}{2}$ -inch, per set..... 14.00
 Extra Dies, 4, $4\frac{1}{2}$, 5 and 6-inch, per set..... 14.00
 Shipping Weight, pounds..... 200

Beaver Die Stocks and Pipe Cutters

No. 80 Beaver Die Stock

Threads all sizes, 4½, 5, 6, 7 and 8-inch, or variations from standard. Construction same as No. 61, one set of dies cutting 4½, 5 and 6-inch and the other 7 and 8-inch.

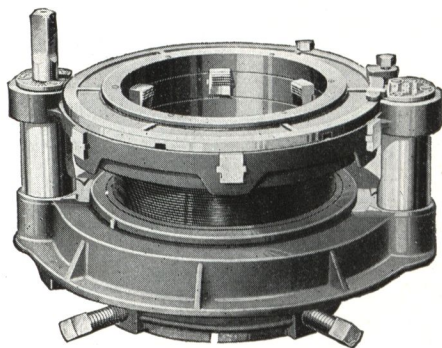


Fig. 4310. No. 80 and 90 Beaver

	Dies	Threading Range	List Price Complete	Shipping Weight Pounds
No. 80.	2 Sets	4½, 5, 6, 7, 8	300.00	230
No. 90.	2 Sets	9, 10, 11, 12	500.00	300

No. 80.	Extra Dies 4½ to 6-inch Set (6 Chasers) list.	20.00
No. 80.	Extra Dies 7 to 8-inch Set (6 Chasers) list.	20.00
No. 90.	Extra Dies 9 and 10-inch Set (6 Chasers) list.	30.00
No. 90.	Extra Dies 11 and 12-inch Set (6 Chasers) list.	30.00

No. 210 Beaver Cross Bar Die Stock

The Beaver Cross Bar differs fundamentally from any die stock manufactured.

The exclusive features are the dies, formed in two sections, and the Cross Bar receding principle operated by the end of the pipe as the thread is cut.

The lower section of the die does the rough work of starting. After it has finished its work the upper section cuts a tapered thread on the Beaver Easy Working Principle. The further the thread is cut the lighter the labor.

The Cross Bar makes a leader screw unnecessary; it allows right and left hand threads to be cut, and does it all in a tool as simple and strong as a solid die plate.

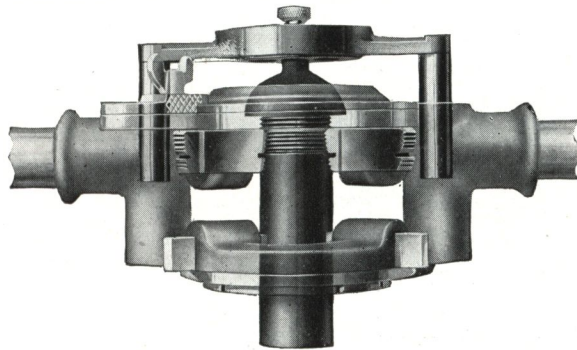


Fig. 4311. No. 210, ½-1¼ Beaver Cross Bar

Price List

No. 210, ½-1¼-inch Cross Bar Beaver complete with Double Ended Dies.....	20.00
Extra Dies, ½ x ¾ and 1 x 1¼, Double Ended, Right or Left.....	5.00
Extra Dies, ¼ x ¾ and ½ x ¾, Double Ended, Right or Left.....	5.00
Extra Dies, ½ x ¾, Single Ended, Right or Left.....	3.50
Extra Dies, 1 x 1¼, Single Ended, Right or Left.....	3.50
Extra Dies, ¼ x ¾, Single Ended, Right or Left.....	3.50

Regularly furnished with double ended reversible dies (210D).

Can be furnished with 2 sets of single ended dies (½ x ¾) and (1 x 1¼) (210S, list 22.00). Additional dies furnished as listed.

Square End Beaver Pipe Cutters

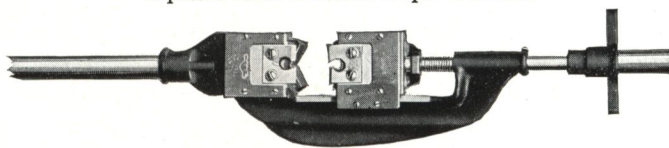


Fig. 4312. No. 1 and No. 5 Beaver Cutters

The No. 1 and 5 Cutters consist of practically two parts, a heavy frame with a fixed V centering jaw and a movable V jaw. These tools are placed over side of pipe and turn like a die stock. They cut the pipe absolutely square, without any burr, and in less time than old style tools.

No. 10 Beaver Pipe Cutter

The same knife construction and automatic feed used in the No. 1 and No. 5 cutters is retained in the No. 10. The only real differences are those made necessary by the introduction of ratchet operation for larger sized pipe. Can be placed over or around the pipe

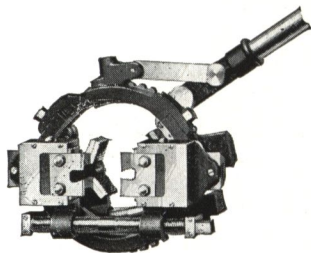


Fig. 4313. No. 10 Cutter

Complete Tool With Two Sets Extra Knives			Extra Sets Knives	
			New	Regrinding
No. 1	⅛ to 1 in.	18.00	1.20	.30
No. 5	½ to 2 in.	20.00	1.50	.40
No. 10	2½ to 4 in.	90.00	2.50	.70
No. 15	2½ to 6 in.	180.00	5.00	1.40
No. 1, 5 or 10, Springs per set.....			.25	

Toledo Adjustable Threading Devices

No. 0 Toledo Adjustable Pipe Threader

Capacity $\frac{1}{8}$ to $\frac{3}{4}$ -inch, inclusive

Complete with Right Hand Dies.....	16.00
Dies, Right Hand, complete set.....	7.50
Dies, Left Hand, complete set.....	12.50
Dies, single set.....	2.50

Light and compact; net weight 7 pounds, and extreme length, 24 inches.

One set of dies for $\frac{1}{8}$ inch, one set for $\frac{1}{4}$ and $\frac{3}{8}$ and a third set for $\frac{1}{2}$ and $\frac{3}{4}$ inch.

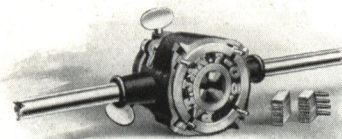


Fig. 4320. No. 0 Toledo

No. 00 Toledo Ratchet Pipe Threader

Capacity $\frac{1}{8}$ to $\frac{3}{4}$ -inch, inclusive

Complete with Oak Case.....	20.00
Ratchet, each.....	3.00
$\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$ Die Heads with Dies, each.....	3.00
$\frac{1}{2}$ and $\frac{3}{4}$ Die Heads with Dies, each.....	3.50
Oak Case, each.....	1.00
Extra Dies, per set of four segments.....	2.00

Desirable for threading pipe in close corners. Nothing to adjust. Operates with little labor and produces perfectly true tapered threads of standard size.

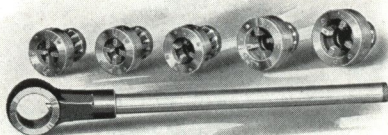


Fig. 4321. No. 00 Toledo Pipe Threader

No. 1 Toledo Adjustable Pipe Threader

Capacity 1-inch to 2-inch, inclusive

List Price.....	24.00
Dies, complete set.....	10.00
Dies, single set.....	2.50

Can also be furnished at the same price (reversed in all its parts) for cutting left hand threads. Neither tool will do both.

Adjustable for variations in the size of fittings. Standard taper or straight locknut threads, or "Pitch" threads may be secured without straining the tool, or without extra labor.

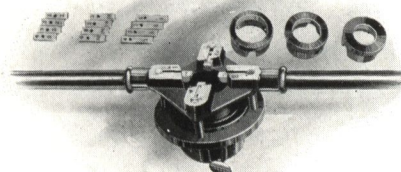


Fig. 4322. No. 1 Toledo Threader

No. 1-A Ratchet Threading Device

Capacity 1-inch to 2-inch Pipe, inclusive

List Price.....	30.00
Dies, complete set.....	10.00
Dies, single set.....	2.50

This tool is in every essential like the No. 1, except that it is equipped with a ratchet. It may be used with two handles as an ordinary die stock, or with one handle inserted in the ratchet case. Especially desirable for threading pipe in trenches, against walls, between rafters, etc.

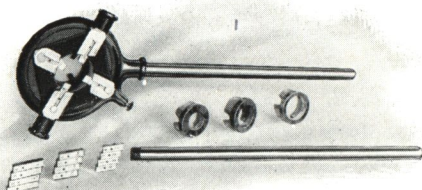


Fig. 4323. No. 1-A Toledo Ratchet

No. 10 and No. 10-A

Toledo Threaders

Capacity 1 inch to 2-inch, inclusive

No. 10, complete.....	28.00
No. 10-A, complete.....	34.00
Dies, per set, 4 pieces.....	2.75
Complete Set, L. H.....	11.00
Left Hand, single set.....	2.75

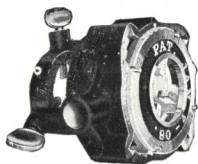


Fig. 4324. No. 10

These tools are offered to those desiring tools threading several sizes of pipe with one set of dies. Left hand dies can be used, but a separate set is required for each size pipe.

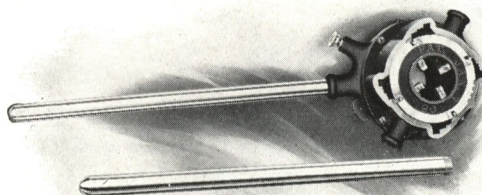


Fig. 4325. No. 10-A Ratchet

No. 1½-R Adjustable Ratchet Threading Device

Capacity 2½ and 3-inch Pipe

Price.....	50.00
Dies, complete set.....	8.00
Dies, single set.....	4.00

This tool is strongly built, operates with a ratchet only, and for a direct acting tool threads pipe very easily.

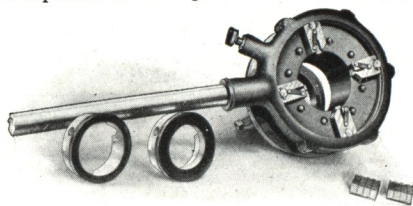


Fig. 4326. No. 1½-R Toledo

Toledo Adjustable Threading Devices

No. 2 Toledo Geared Threading Device

Capacity 2½ to 4-inch Pipe, inclusive

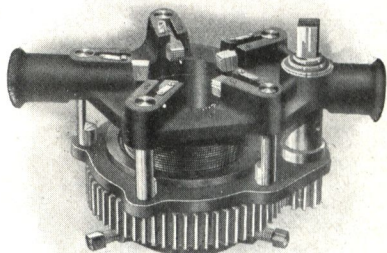


Fig. 4330. No. 2 Toledo

Complete with Dies, Ratchet and Driving Cross.....	100.00
Dies, complete set.....	32.00
Dies, single set.....	8.00

This tool is light and compact and easily operated. The ease of operation is not obtained at the expense of speed. A 4-inch thread may be completed in 10 minutes without undue effort.

Shipping weight, 103 pounds.

No. 25 Toledo Geared Threading Device

Capacity 2½ to 6-inch Pipe, inclusive

Complete with Dies, Ratchet and Driving Cross.....	230.00
Extra Dies, per set.....	8.00

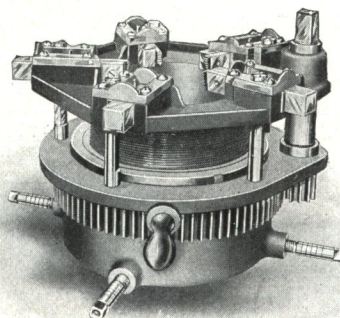
A tool intermediate in size to the No. 2 and No. 3. For those who require to thread pipe a little larger than the No. 2 will handle, yet do not need one as large as the No. 3.

Threads entire range of sizes with one set of dies. An extra set of dies furnished with the tools so a sharp set may always be on hand.

Embodies the "Toledo" die-receding principle, has no cam-plate, is very simple, and positive in its action.

One man can thread 6-inch pipe easily.

Shipping weight, 152 pounds.



No. 4331. No. 25 Toledo

No. 3 Toledo Geared Threading Device

Capacity 4½ to 8-inch Pipe, inclusive

Complete with Dies, Ratchet and Driving Cross.....	300.00
Dies, complete set.....	60.00
Dies, single set.....	12.00

This tool is light, compact and easily operated. Its net weight is 155 pounds. With clearance in other directions it may be operated on a pipe, the center of which is within 10 inches of a wall or other obstruction. One man can readily cut an 8-inch thread with this tool. Works rapidly and ease of operation is not obtained at the expense of speed.

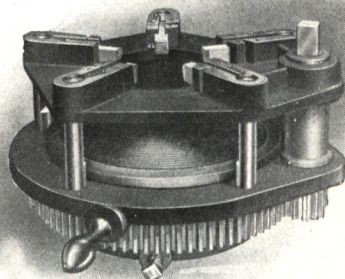


Fig. 4332. No. 3 Toledo

No. 4 Toledo Geared Adjustable Threading Device

Capacity 9, 10 and 12-inch Pipe

Complete with Dies, Ratchet and Driving Cross.....	500.00
Dies, complete set.....	60.00
Dies, single set, per set.....	20.00

This tool will be appreciated by the engineers of large power plants, superintendents of pipe lines, and in all other directions where it is desirable and necessary to cut threads on large size pipe. This tool may be put on a pipe in a line, or well, any place in fact, and the work desired of same accomplished. Its weight is only 255 pounds. It requires two men to put the tool on the pipe, but after it is on one man can cut the thread easily.

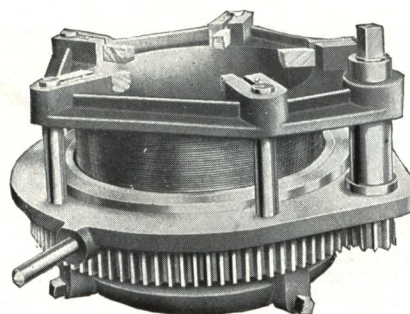


Fig. 4333. No. 4 Toledo

Armstrong Adjustable Stocks and Pipe Dies



Fig. 4340. No. 1 and 2

No. 1 Stock and Dies

4 R. H. Pipe Dies, $\frac{1}{8}$ to $\frac{1}{2}$ -inch, each.....	9.00
4 R. H. Pipe Dies, $\frac{1}{8}$ to $\frac{1}{2}$ -inch, each.....	14.00
Complete Set Extra Dies, R. or L., per set.....	1.25
Furnished $\frac{1}{8}$ to $\frac{1}{2}$ -inch R. H., unless otherwise ordered.	

No. 2 Stock and Dies

5 R. H. Pipe Dies, $\frac{1}{4}$ to 1-inch, each.....	12.00
6 R. H. Pipe Dies, $\frac{1}{8}$ to 1-inch, each.....	14.00
5 Pipe Dies, R. & L., $\frac{1}{4}$ to 1-inch, each.....	20.00
6 Pipe Dies, R. & L., $\frac{1}{8}$ to 1-inch, each.....	23.00
Complete Set Extra Dies, R. or L., per set.....	1.50
Furnished $\frac{1}{4}$ to 1-inch R. H., unless otherwise ordered.	

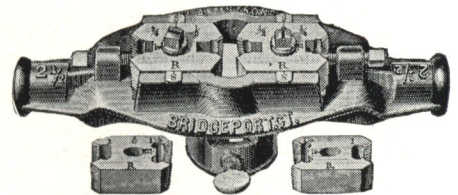
No. 2 $\frac{1}{2}$ Stock and Dies

4 Dies, Double Ended, $\frac{1}{2}$ x $\frac{3}{4}$ and 1 x $1\frac{1}{4}$, each.....	12.00
With Dies $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$ x $\frac{3}{4}$, 1 x $1\frac{1}{4}$ R. H., each.....	18.00
With Dies $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{3}{4}$, 1, $1\frac{1}{4}$ R. & L., each.....	23.00
With R. & L. Dies, $\frac{1}{2}$ to $1\frac{1}{4}$, each.....	18.00
Double End Dies, $\frac{1}{2}$ x $\frac{3}{4}$ or 1 x $1\frac{1}{4}$ R. or L., each.....	3.25
Single End Dies, $\frac{1}{4}$ or $\frac{3}{8}$, each.....	2.50

Note: Dies $\frac{1}{4}$ and $\frac{3}{8}$ are Single Ended, R. or L.

No. 3 Stock and Dies

With 3 Sizes Pipe Dies, $1\frac{1}{4}$ to 2-inch, Right, each.....	20.00
With 4 Sizes Pipe Dies, 1 to 2-inch, Right, each.....	24.00
With 5 Sizes Pipe Dies, $\frac{3}{4}$ to 2-inch, Right, each.....	28.50
With 6 Sizes Pipe Dies, $\frac{1}{2}$ to 2-inch, Right, each.....	33.00
R. & L. 3 Sizes Pipe Dies, $1\frac{1}{4}$ to 2-inch, each.....	32.00
R. & L. 4 Sizes Pipe Dies, 1 to 2-inch, each.....	40.00
R. & L. 5 Sizes Pipe Dies, $\frac{3}{4}$ to 2-inch, each.....	48.50
R. & L. 6 Sizes Pipe Dies, $\frac{1}{2}$ to 2-inch, each.....	57.00
Extra Dies, R. or L., $\frac{1}{2}$, $\frac{3}{4}$, 1, $1\frac{1}{4}$, $1\frac{1}{2}$, 2-inch, each.....	4.00

Fig. 4341. No. 2 $\frac{1}{2}$ and 3

Note: Unless otherwise ordered No. 2 $\frac{1}{2}$ is furnished $\frac{1}{2}$ to $1\frac{1}{4}$ -inch Right Hand, and No. 3, 1 to 2-inch Right Hand.

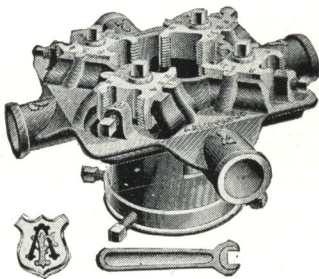


Fig. 4342. No. 6

No. 6 Stock and Dies

Stock and Die, $2\frac{1}{2}$ x 3-inch, Right Hand, each.....	40.00
Stock and Die, $2\frac{1}{2}$ x 3-inch, R. and L., each.....	55.00
Leader Screw, each.....	4.00
Extra Double End Die, $2\frac{1}{2}$ x 3, R. or L., each.....	15.00

Furnished $2\frac{1}{2}$ to 3-inch unless otherwise specified.

The change from $2\frac{1}{2}$ to 3-inch is made by simply reversing the Dies end for end, when they will cut the two standard sizes without further adjustment.

The dies listed are the only ones made for the No. 6 Machine. It will not thread pipe smaller than $2\frac{1}{2}$ -inch.

No. 7 Stock and Dies

With Dies $2\frac{1}{2}$, 3, $3\frac{1}{2}$, 4-inch, Right, each.....	60.00
With Dies $2\frac{1}{2}$ and 3-inch, Right, each.....	45.00
With Dies $3\frac{1}{2}$ and 4-inch, Right, each.....	45.00
$2\frac{1}{2}$ and 3-inch, R. & L., or $3\frac{1}{2}$ and 4-inch, R. & L., each.....	60.00
With Dies $2\frac{1}{2}$ to 4-inch, R. & L., each.....	92.00
Leader Screw, each.....	5.00
Extra Dies, $2\frac{1}{2}$ x 3, R. or L., each.....	16.00
Extra Dies, $3\frac{1}{2}$ x 4-inch, R. or L., each.....	16.00

Dies are Double-Ended and come in sets of 4 pieces.

Furnished $2\frac{1}{2}$ to 4-inch, R. H., unless otherwise ordered.

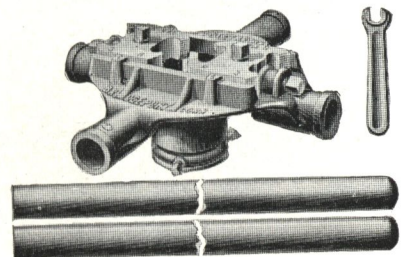


Fig. 4343. No. 7

Extra Parts For Armstrong Adjustable Stocks

No.	1	2	$2\frac{1}{2}$	3	6	7
Bushings, each.....	.20	.25	.40	.50	1.00	1.50
Wrenches for Stocks, each.....	.25	.25	.25	.50	.50	.75
Collar screws, each.....	.12	.12	.15	.15	.25	.25
Adjusting Screws, each.....	.10	.10	.15	.15	.20	.20
Thumb Screws, each.....	.10	.10	.10	.15	...	...
Handles, per set.....	.30	.50	.50	.75	3.00	3.00

Nye Three-Way Die Stock

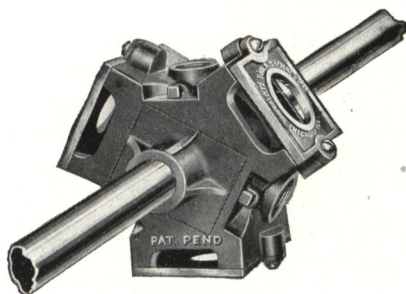


Fig. 4350

This stock holds $\frac{1}{2}$, $\frac{3}{4}$ and 1-inch solid dies, size of block $2\frac{3}{8}$ inches square. The tool is a one-piece casting, containing three die boxes and three bushings, all of which are parts of the one casting. Price, complete with $\frac{1}{2}$, $\frac{3}{4}$ and 1-inch dies..... 15.00

Nye Four-Way Die Stock

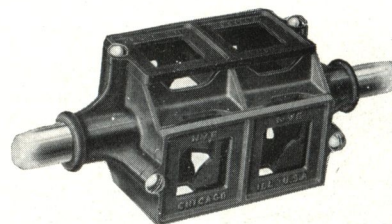


Fig. 4351

This stock is made for the convenience of gas men, electricians and others who require constant use of dies in sizes $\frac{3}{8}$ to 1-inch inclusive. The bushings are tapped in the stock opposite each die; no detachable parts to become lost. The stock holds $\frac{3}{8}$, $\frac{1}{2}$, $\frac{3}{4}$ and 1-inch dies in the $2\frac{3}{8}$ -inch square block.

Stock, complete with $\frac{3}{8}$, $\frac{1}{2}$, $\frac{3}{4}$ and 1-inch dies..... 17.50

Nye Dies

Improved
Skip Tooth
Patent

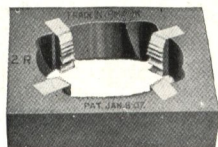


Fig. 4352. Solid Die

Hardened
and Tempered
in Oil

Price List of Nye Solid Dies

Size Block 4x4x $\frac{7}{8}$ No. 2 Stock Price Each	Size Block 3x3x $\frac{3}{4}$ for 1 $\frac{1}{2}$ and 1 $\frac{3}{4}$ Stock Price Each	Size Block 2 $\frac{1}{2}$ x2 $\frac{1}{2}$ x $\frac{3}{4}$ No. 1 Stock Price Each
2-inch..... 5.00	1 $\frac{1}{2}$ -inch..... 4.50	1-inch..... 3.50
1 $\frac{1}{2}$ -inch..... 5.00	1 $\frac{1}{4}$ -inch..... 4.00	$\frac{3}{4}$ -inch..... 3.00
1 $\frac{1}{4}$ -inch..... 4.50	1-inch..... 4.00	$\frac{1}{2}$ -inch..... 3.00
1-inch..... 4.50	$\frac{3}{4}$ -inch..... 3.50	$\frac{3}{8}$ -inch..... 2.50
$\frac{3}{4}$ -inch..... 4.00	$\frac{1}{2}$ -inch..... 3.50	$\frac{1}{4}$ -inch..... 2.50
$\frac{1}{2}$ -inch..... 4.00	$\frac{3}{8}$ -inch..... 3.00	$\frac{1}{8}$ -inch..... 2.00
	$\frac{1}{4}$ -inch..... 3.00	
	$\frac{1}{8}$ -inch..... 2.50	
Size Block 2x2x $\frac{1}{2}$ Price Each	Size Block 5x5x1 $\frac{1}{4}$ Price Each	
$\frac{1}{2}$ -inch..... 3.00	2 $\frac{1}{2}$ -inch..... 13.00	
$\frac{3}{8}$ -inch..... 2.50	3-inch..... 14.00	
$\frac{1}{4}$ -inch..... 2.50		
$\frac{1}{8}$ -inch..... 2.00		

Improved
Skip Tooth
Patent

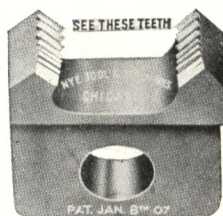


Fig. 4354. Armstrong Pattern

Hardened
and Tempered
in Oil

Price List of Nye Adjustable Dies to Fit Armstrong Stocks

$\frac{1}{8}$ -inch to $\frac{1}{2}$ -inch to fit No. 1 Stock, each.....	3.50
$\frac{1}{8}$ -inch to 1-inch to fit No. 2 Stock, each.....	3.50
$\frac{1}{2}$ -inch to 1 $\frac{1}{4}$ -inch to fit No. 2 $\frac{1}{2}$ Stock, each.....	5.00
$\frac{1}{2}$ -inch x $\frac{3}{4}$ -inch D. E. to fit No. 2 $\frac{1}{2}$ Stock, each.....	5.00
1-inch x 1 $\frac{1}{4}$ -inch D. E. to fit No. 2 $\frac{1}{2}$ Stock, each.....	5.00
$\frac{1}{2}$ -inch to 2-inch to fit No. 3 Stock, each.....	5.00
2 $\frac{1}{2}$ -inch x 3-inch D. E. to fit No. 6 Stock, each.....	25.00
3 $\frac{1}{2}$ -inch x 4-inch D. E. to fit No. 7 Stock, each.....	35.00

Nye Solid Die Stock

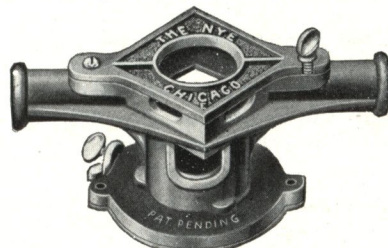


Fig. 4353. Nye Solid Die Stock

No.....	1	2
Threads Pipe, inches.....	$\frac{1}{8}$ to 1	$\frac{1}{4}$ to 2
Size Block, inches.....	2 $\frac{1}{2}$ x $\frac{3}{4}$	4 x $\frac{7}{8}$
Each.....	4.00	6.00

Nye Knurled Cutter Wheels



Fig. 4355. Knurled Cutter Wheel

No.	Each	No.	Each	No.	Each
1 Barnes.....	.50	1 Saunders.....	.50	1 Nye.....	.70
2 Barnes.....	.60	2 Saunders.....	.60	2 Nye.....	.80
3 Barnes.....	.80	3 Saunders.....	1.10	1 Trimmo.....	.60
4 Barnes.....	1.00	4 Saunders.....	1.10	2 Trimmo.....	.60
5 Barnes.....	1.10	5 Saunders.....	1.10	3 Trimmo.....	.90

Nye Cutter Wheels Pins

Made for all standard makes of pipe cutters

No.	Each	1	2	3	4	0
Barnes Type, List per dozen.....	1.00	1.00	1.00	2.00	2.50	
Saunders Type, List per dozen.....	1.20	1.20	1.80	1.80	1.80	
Trimmo Type, List per dozen.....	1.00	1.00	1.00	1.00	1.00	
Nye Type, List per dozen.....	1.20	1.80	1.80	1.80	1.80	

Union Valve Nipple Wrench



Fig. 4356. Wrench

This wrench is made in such a way that when inserted in a radiator union valve it catches the nipples at the base, thereby avoiding the danger of injuring them, which so commonly occurs where a wrench handle or metal bar is used for this purpose. This tool is very light, but strong enough to stand any strain required while in use. It takes sizes from one-half to two inches inclusive. List Price, each..... 1.50

Ratchet Stock and Dies

With Internal Guide for Threading Pipe

Regularly furnished with one reversible Ratchet Stock, Round Pipe Dies, $1\frac{9}{16}$ inch diameter, and Internal Guides for each pipe size, in a substantial plain box.

Briggs Standard right hand dies furnished unless otherwise specified.

The Ratchet Die Stock is a very handy tool for ceiling work and close places. The Internal Guide has a reaming point which cleans up the pipe burr while insuring a straight thread. These sets are of great convenience in electrical conduit work.

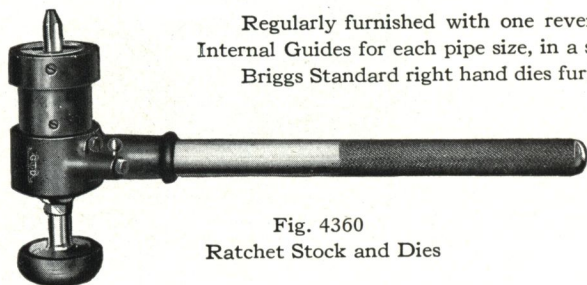


Fig. 4360
Ratchet Stock and Dies

No.	Price Each	Cutting Sizes Inches	Weight Pounds	Length Stock Inches
R202A	14.50	$\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$	4	14
R202B	12.00	$\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$	4	14

Pipe Bending Form

Designed for straightening and bending pipes from $\frac{1}{8}$ to 2 inch. Convenient and indispensable for the pipe bench. There is nothing to get out of order and it will last a lifetime. The form is supplied with bolt holes so that it can be readily attached to a bench or other substitute. Workman can conveniently straighten pipe or make an offset or quarter bend. Has extension eye bolt, so that the pipe when bending is held close to the former, thus enabling the operator to make a close and accurate bend.

No. 1	Takes Pipe from $\frac{1}{8}$ to $1\frac{1}{4}$ inch, price each.....	3.50
No. 2	Takes Pipe from 1 to 2 inch, price each.....	4.50

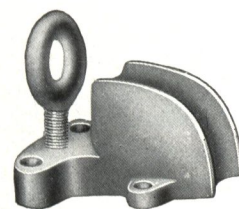


Fig. 4361
Bending Form

Rex Pipe Bender

Quite the handiest bending tool yet devised for field and shop work. The small spool can be placed instantly to give any desired bending angle—simply by adjusting the nut. Practically impossible to bend pipe or rods except at true angles. There are no aggravating “twists” and it bends pipe without flattening or kinking. Quickly attached to bench, floor or wall and can be removed with equal promptness. Made for continued heavy service.

Plumbers, steam or gas pipe fitters and electrical conduit workers will find this the handiest tool on the market at the present time.

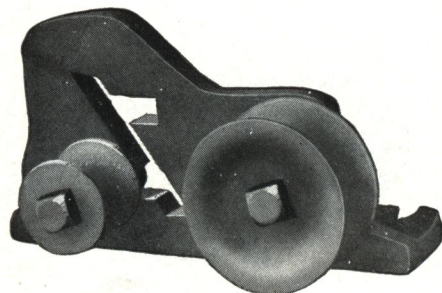


Fig 4362. Rex Pipe Bender

No.	Bending Pipe Inches	Weight Pounds	Each
1	$\frac{1}{8}$ to $1\frac{1}{4}$	17	6.50
2	$1\frac{1}{4}$ to 2	50	12.00

The Boss Adjustable Hickey

A practical tool for bending pipes, conduit and rods. Without adjustment it will bend $\frac{1}{8}$ to 1 inch pipe and conduit.

The natural pull of the handle fits the Hickey to the pipe or conduit with a positive grip which prevents slipping. The disc assures a perfect job. It guides the pipe from the start and with its rolling motion shapes to the desired bend. As the bend progresses the operator advances the handle notch by notch, on the disc, and keeps the working position of the handle clear of the job.

When used with a pipe standard, the handle socket forms a swivel, so that if there is an obstruction the operator can turn the Hickey and bend the pipe from another position.

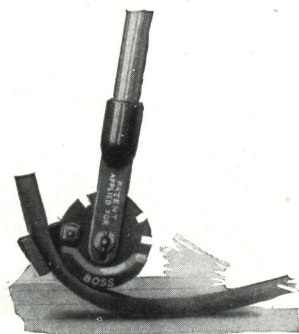
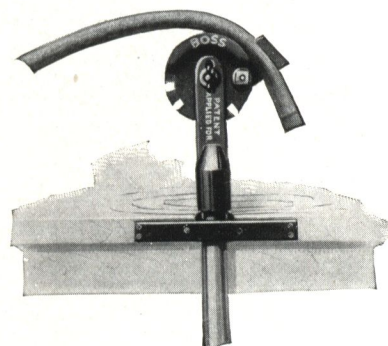


Fig. 4363
Showing use of Hickey on Floor



Showing use of Hickey on Bench

Boss Hickey No. 1, weight 10 pounds, price each.....	7.00
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Malleable Stocks and Dies

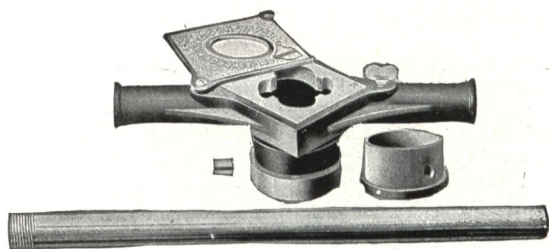
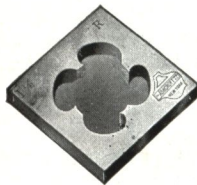
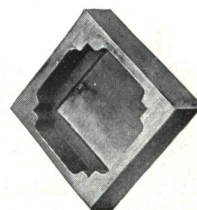


Fig. 4370. Malleable Pipe Stock

Fig. 4371
Pipe DieFig. 4372
BushingFig. 4373
Die Frame

Malleable Stocks and Dies

No.	0	1	1 1/2	1 3/4	2	3	3 1/2
Size of Dies	1/8, 1/4, 3/8, 1/2	1/4, 3/8, 1/2, 3/4, 1	3/4, 1, 1 1/4	1, 1 1/4, 1 1/2	1 1/4, 1 1/2, 2	2 1/2, 3	2 1/2, 3
Dimensions	2 x 1 1/2	2 3/8 x 3 3/4	3 x 3 3/4	3 x 3 3/4	3 3/8 x 1 7/8	4 7/8 x 1 1/4	4 7/8 x 1 1/4
Complete	9.50	15.00	13.50	13.50	20.00	43.00	51.00
Stock only	3.50	5.00	6.00	6.00	9.50	25.00	33.00
Extra Dies	1.50	2.00	2.50	2.50	3.50	9.00	9.00
Extra Bushings	.25	.35	.45	.45	.60	1.00	1.00
Die Frames	.....	.30	.40	.40	.50	.60	.60

Stocks Nos. 2, 3 and 3 1/2 have leader screw attachment.

Armstrong Nipple Holder

This holder is double-ended and holds two sizes of nipples as listed, either right or left hand.

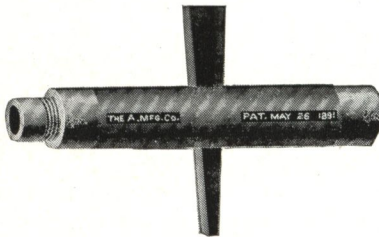


Fig. 4374. Armstrong Nipple Holder

When the thread is cut the nipple can be removed by starting back the wedge, which loosens the inner part of the holder and allows the nipple to be easily taken out with the fingers.

Nipple Holders

Stock No.	2	2	2 1/2	2 1/2	3	3	6	7	7
Range	3/8 to 1/2	3/4 to 1	1/2 & 3/4	1 & 1 1/4	1 & 1 1/4	1 1/2 & 2	2 1/2 & 3	2 1/2 & 3	3 1/2 & 4
Weight, pounds	3	3	3	7	17	11	31	31	37
Each	3.00	3.00	3.00	3.00	3.50	3.50	*8.00	*8.00	*8.00

Holder for No. 2 and No. 3 Stocks, 3/8 to 2-inch inclusive (weight 26 pounds,) per set. 12.00

*Price per set.

Curtis Nipple Holder

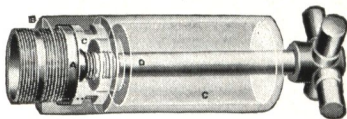


Fig. 4375. Curtis Nipple Holder

These Holders are intended especially for Forbes Machines, but can be furnished built on the same principle, for other make of machines, but at special prices, which will be quoted on application.

The principle is as follows: A detachable cap (b) suitable for holding the size of pipe to be held and into which the pipe is screwed loosely. A plunger (a) capable of a lateral movement by turning the screw (d). To operate the proper cap (b) for size of pipe to be held is placed in position on the body and secured by giving one-eighth turn. The plunger (a) is run forward by turning the screw (d). When the nipple to be held is screwed in it will bottom on plunger (a) before it jams in the thread. When the nipple is to be taken out a slight withdrawal of the plunger (a) will allow the nipple to be unscrewed with the fingers.

Curtis Nipple Holder

Holder No.	1	1 1/2	2	3	4	5	6
Range, inches	1/4-2 R & L	1-3 R & L	1-4 R & L	1-6 R & L	2 1/2-8 R & L	2 1/2-10 R H	2 1/2-10 R & L
Weight, pounds	40	65	150	310	564	805	890
Price, each	24.00	26.00	54.00	90.00	162.00	205.00	260.00

Thread Chasers

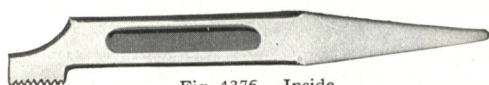


Fig. 4376. Inside



Fig. 4377. Outside

Cutting 4 1/2, 5, 5 1/2, 6, 7, 8, 9, 10, 11, 11 1/2, 12, 13, 14 and 16 threads to the inch	.30	.60
Cutting 18, 19, 20, 22, 24, 26, 27, 28, 30, 32, 34, 36, 38 and 40 threads to the inch	.25	.50

Price Each	Per Pair
.30	.60
.25	.50

Furnished in V and United States Standard Threads. Specify form of thread required.

Threads not given in above list will be charged at special prices.

Screw Plates and Die Stocks

Reece Screw Plates

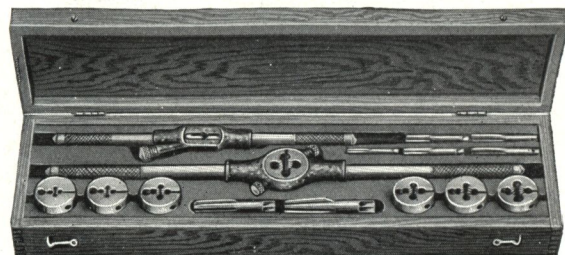


Fig. 4380. Assortment OK5T

OK Screw Plates With Patent Adjustable Guide Stocks

Furnished complete in highly finished hardware box with light metal tray, containing taps and dies, adjustable guide die holder and positive grip tap wrench.

Assortment No.	Cutting Size	Price Per Set
OK1	$\frac{1}{4}$ -20, $\frac{5}{16}$ -18, $\frac{3}{8}$ -16, $\frac{7}{16}$ -14, $\frac{1}{2}$ -12.....	7.00
OK1T	$\frac{1}{4}$ -20, $\frac{5}{16}$ -18, $\frac{3}{8}$ -16, $\frac{7}{16}$ -14, $\frac{1}{2}$ -12.....	8.00
OK5T	$\frac{1}{4}$ -20, $\frac{5}{16}$ -18, $\frac{3}{8}$ -16, $\frac{7}{16}$ -14, $\frac{1}{2}$ -12, $\frac{5}{8}$ -11, $\frac{3}{4}$ -10.....	11.00
OK10T	$\frac{1}{4}$ -20, $\frac{5}{16}$ -18, $\frac{3}{8}$ -16, $\frac{7}{16}$ -14, $\frac{1}{2}$ -12, $\frac{5}{8}$ -11, $\frac{3}{4}$ -10, $\frac{7}{8}$ -9, 1-8.....	18.00

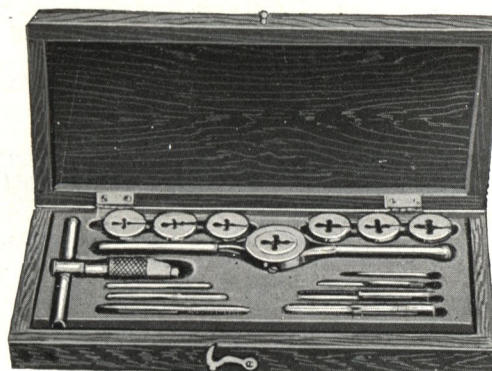


Fig. 4381. Plumbers Screw Plate

Taps and Dies are especially selected to match the screws used in bath room fixtures and other branches of the plumbing business.

Each set includes the following:

Reece No. B Plain Stock, 7 inches long for $\frac{1}{8}$ -inch outside diameter dies.

No. 1 Reece Premier Adjustable T Tap Wrench.

Reece Round Adjustable Dies, $\frac{1}{8}$ -inch outside diameter x $\frac{1}{4}$ -inch thick.

Machine Screw or Plug Taps (one to match each size of die).

All complete in hardwood case.

	Number of Threads Per Inch										Price Per Set
Size.....	32	32	32	32	32	32	30	28	24	24	20
RX5.....	4	6	7	8	9	10	10	10	10	12	$\frac{1}{4}$
RX6.....	4	6	7	8	9	10	10	10	10	12	$\frac{1}{4}$
RX8.....	4	6	7	8	9	10	10	10	10	12	$\frac{1}{4}$

No. 6-32 matches the thread on Douglas Flush Ball Stem.

No. 8-32 for Fuller Eccentric.

No. 10-24 for Ball Cock Screw.

$\frac{1}{4}$ -inch-20 for Ball Cock Rod and After Fill Tubes.

The other sizes are mostly for Bibb Screws.

"Perfect Thread" Open Die Stocks

For Threading Brass Tubing

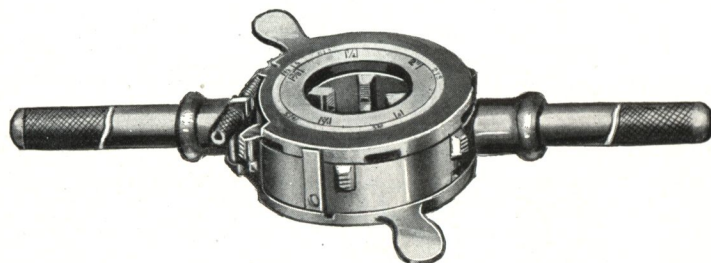


Fig. 4382. Perfect Thread Die Stock

Range 1-inch to 2-inch actual diameter.

This one stock with one set of threading chasers (27 pitch of thread) and adjustable guide will cut all sizes of brass pipe with 27 thread from 1 to 2-inch diameter.

After the thread has been cut the chasers can be instantly released, so there is no backing off. Chasers can be removed easily for resharpening. Adjustable guide does away with all loose bushings. The 3 guide jaws are operated by a cam and can be easily and quickly set for all sizes the tool will thread. A positive screw stop prevents jaws and chasers from opening while in use.

No. 50 Die Stock, complete with one set of 6 chasers for cutting 27 pitch thread on brass tubing of all sizes from 1-inch to 2-inch, together with adjustable guide..... 10.00

Extra Die Chasers (27 pitch), per set of 6..... 4.00

Adjustable Automobile Stock

A. L. A. M. Thread. In Hardwood Case

No. 1. $\frac{1}{4}$ -28, $\frac{5}{16}$ -24, $\frac{3}{8}$ -24, $\frac{7}{16}$ -20, $\frac{1}{2}$ -20, $\frac{9}{16}$ -18, $\frac{5}{8}$ -18..... 15.00

No. 1, with 7 Dies, 7 Plug Taps, 1 12-inch Tap Wrench

$\frac{1}{4}$ -28, $\frac{5}{16}$ -24, $\frac{3}{8}$ -24, $\frac{7}{16}$ -20, $\frac{1}{2}$ -20, $\frac{9}{16}$ -18, $\frac{5}{8}$ -18..... 21.00

No. 2. $\frac{1}{2}$ -20, $\frac{9}{16}$ -18, $\frac{5}{8}$ -18, $\frac{11}{16}$ -16, $\frac{3}{4}$ -16, $\frac{7}{8}$ -14, 1-14..... 20.00

No. 2, with 7 Dies, 7 Plug Taps, 1 18-inch Tap Wrench

$\frac{1}{2}$ -20, $\frac{9}{16}$ -18, $\frac{5}{8}$ -18, $\frac{11}{16}$ -16, $\frac{3}{4}$ -16, $\frac{7}{8}$ -14, 1-14..... 32.50

Length No. 1 Stock, 19 $\frac{1}{2}$ inches.

Length No. 2 Stock, 35 inches.

Weight No. 1, Without Taps and Wrench, pounds..... 10

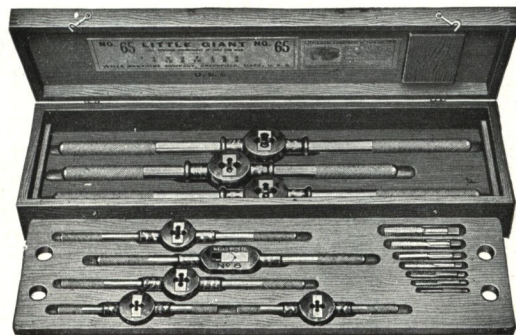
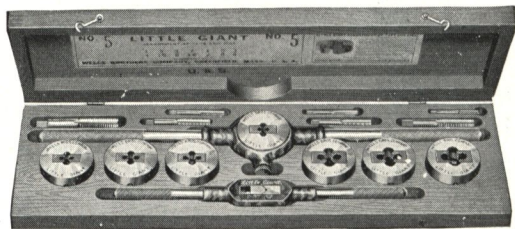
With Taps and Wrench, pounds..... 11 $\frac{1}{2}$

Weight No. 2, Without Taps and Wrench, pounds..... 23 $\frac{1}{4}$

With Taps and Wrench, pounds..... 28

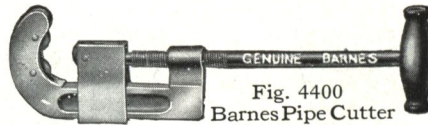


Fig. 4383. Auto Stock



Each assortment is contained in a neat wood case, as illustrated, and contains necessary die stocks and adjustable tap wrenches for holding all sizes in the assortment.

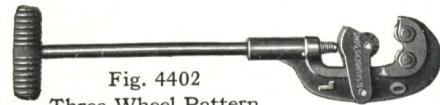
Barnes Pipe Cutter

For Cutting Pipe $\frac{1}{8}$ to 12 InchFig. 4400
Barnes Pipe Cutter

Size of Cutter No.	Size of Pipe Inches	Pipe Cutter	Cutter Wheels	Wheel Pins Per Dozen	Hooks	Slides	Nuts	Handles	Approximate Weights Pounds
1	$\frac{1}{8}$ to 1	4.50	.25	1.00	1.75	.75	.25	1.00	3
2	$\frac{1}{2}$ to 2	6.00	.30	1.00	2.60	1.00	.25	1.25	5
3	$1\frac{1}{2}$ to 3	10.00	.40	1.00	4.55	2.00	*	2.25	9
4	$2\frac{1}{2}$ to 4	20.00	.50	2.00	9.50	4.50	*	4.50	14
5	4 to 6	30.00	.75	2.00	13.75	7.00	*	7.00	23
6	6 to 8	40.00	.75	2.00	20.00	8.50	*	9.25	28
$6\frac{1}{2}$	8 to 10	45.00	.75	2.00	23.00	9.50	*	10.25	34
7	9 to 12	50.00	.75	2.00	25.00	11.25	*	11.50	51

*Nut and Hook in one piece in these sizes.

Saunders Pipe Cutters

Fig. 4401
One Wheel and Roller PatternFig. 4402
Three-Wheel Pattern

Size Cutter No.	Size of Pipe Inches	One Wheel and Roller Pattern	Three-Wheel Pattern	Extra Cutter Wheels	Extra Block and Wheel	Extra Rollers	Extra Pins
1	$\frac{1}{8}$ to 1	3.00	3.00	.24	1.25	.24	.10
2	1 to 2	4.50	4.50	.32	1.75	.32	.10
3	2 to 3	11.00	11.00	.60	2.75	.50	.15
4	$2\frac{1}{2}$ to 4	18.00	18.00	.60	3.50	.50	.15
5	4 to 6	28.00	.....	.60	4.00	.60	.15

Three-Wheel Pattern not made in No. 5 size.

Armstrong Pipe Cutter

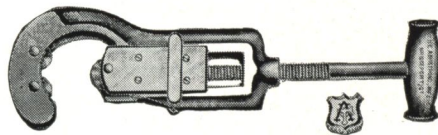
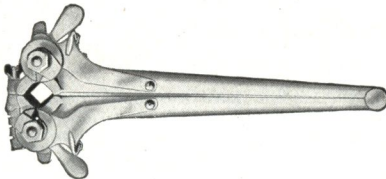


Fig. 4403. Armstrong Pipe Cutter

Size Cutter No.	Size of Pipe Inches	Cutters Each	Hook With Strap	Block Half-Tapped	Block Half-Counter-bored	Handles and Screws	Wheel Pins	Wheels	Rollers
1	$\frac{1}{8}$ to $1\frac{1}{4}$	4.50	.60	.25	.25	.75	.05	.25	.25
2	$\frac{1}{2}$ to $2\frac{1}{2}$	6.00	.85	.40	.40	1.00	.06	.30	.30
3	$1\frac{1}{2}$ to 4	15.00	1.25	.60	.65	1.75	.10	.50	.50

Vosper and Toledo Pipe Cutters

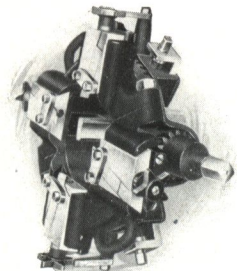
Fig. 4404. Vosper Pipe Cutter
Capacity, $\frac{1}{2}$ to 2 inches

Each..... 16.00

These tools make clean, straight, square-end cuts without bur, leaving the pipe in the ideal condition for cutting the thread.

Where necessity demands, the "Toledo" tool will split in two in the middle so it may be used on pipe already installed, or that may have fittings on either end.

Will also cut off heavy or double extra heavy pipe just as well as the standard thickness.

Fig. 4405. Toledo No. 250
Pipe Cutter

$2\frac{1}{2}$ to 6 inches, inclusive, complete with ratchet handle.
Each..... 80.00

Trimo Pipe Cutter and Parts

One or Three Wheels

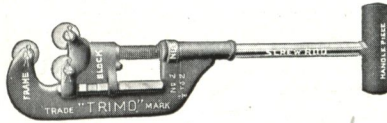


Fig. 4410. Trimo Pipe Cutter

Size No.	1 1/8 to 1 1/4	2 1/2 to 2	3 1 1/4 to 3
Cuts Pipe, inches	4.50	6.00	10.00
Price, each	.35	.35	.40
Extra Nuts, each	.30	.30	.40
Extra Wheels, each	.30	.30	.40
Extra Rolls, each	1.00	1.00	1.00
Extra Pins with Cotter Pins, per dozen	.20	.20	.20
Extra Cotter Pins, per dozen	.60	.60	.60
Extra Anti-friction Washers, per dozen	.10	.10	.10
Extra Fork Block Carrier, each	1.25	1.25	2.25
Extra Roll Block, each	2.25	2.50	3.25
Extra Frame, each	1.00	1.25	2.00
Extra Handle Screw, each	.35	.35	.35
Extra Handle, each	.03	.03	.03
Extra Roll Block Pin			

Cast Iron Pipe Cutter

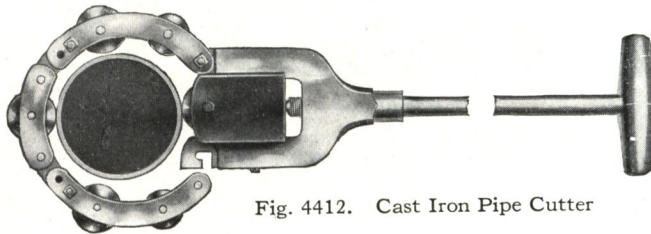
Cuts to exact
measureMakes a clean,
even cut

Fig. 4412. Cast Iron Pipe Cutter

Adapted for trench
workWill shorten a cast
iron pipe half an
inch if necessary

No.	1
Cuts Cast Iron Pipe Size, inches	4, 6, 8
Cutters, complete, each	25.00
Extra Loops with Wheels, each	7.00
Block with Wheel, each	.95
Wheels, each	.23
Spindle with Handle, each	.70
Extra Bolts for Loops, each	.12

Cast Iron Pipe Cutter

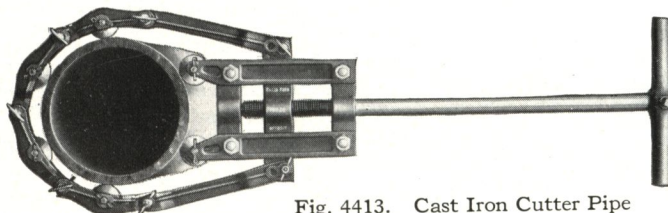
Every point in
contact with the
pipe is a
cutting disc

Fig. 4413. Cast Iron Cutter Pipe

The cutter when
adjusted on the pipe,
need only be moved
in a small part of
a circle in order
to cut entirely around
the pipe

No.	01	1
Cuts Cast Iron Pipe Size, inches	4 to 8	4 to 12
Cutters, complete, each	32.00	48.00
Cutter Wheels, each	.40	.40
Wheel Pins, each	.20	.20
Thumb Bolts and Nuts, each	.40	.40
Short Curved Links, each	3.00	3.00
Weight, pounds	45	50

Drop Forged Chain Pipe Wrenches

With Double End Reversible Jaws for Turning or Holding Pipe
Pipe Fittings, Etc., From $\frac{1}{8}$ to 12 inches Diameter

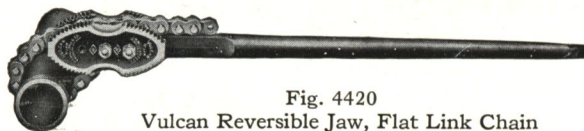


Fig. 4420
Vulcan Reversible Jaw, Flat Link Chain

No.	30	31	32	33	33½	34	35	*36
Size Pipe, inches	$\frac{1}{8}$ to $\frac{3}{4}$	$\frac{1}{8}$ to $1\frac{1}{2}$	$\frac{1}{4}$ to $2\frac{1}{2}$	$\frac{3}{4}$ to 4	1 to 6	$1\frac{1}{2}$ to 8	2 to 12	4 to 18
Extreme Length, inches	13¾	20	27	37	44½	50½	64½	87
Weight, pounds	2¾	5¾	10	16	24	31	50	137
Length Chain, inches	9½	13½	17½	22½	31	39	54½	74½
Breaking Strain, pounds	3600	6700	9800	12500	14300	15700	21600	40000
Complete Wrench, each	2.50	3.50	5.00	7.00	9.00	11.00	18.00	40.00
Extra Chains, each	.75	1.00	1.50	2.50	3.50	4.50	7.50	20.00
Extra Jaws, pair	1.00	1.75	2.75	4.00	4.75	5.50	7.50	16.00
Extra Nuts and Studs for Jaws, set	.20	.25	.35	.45	.55	.70	.90	....

*Non-Reversible Jaw form for pipe sizes larger than 12-inch.
Made also with Cable Chain.



Fig. 4421
Vulcan (old style) Flat Link Chain Wrench

No.	10	11	12	13	13½	14	15	16
Size Pipe, inches	$\frac{1}{8}$ to $\frac{3}{4}$	$\frac{1}{8}$ to $1\frac{1}{2}$	$\frac{1}{4}$ to $2\frac{1}{2}$	$\frac{3}{4}$ to 4	1 to 6	$1\frac{1}{2}$ to 8	2 to 12	4 to 18
Extreme Length, inches	13¾	20	27	37	44½	50½	64½	87
Weight, pounds	1¾	5¾	10	16	24	31	50	137
Length Chain, inches	9½	13½	17½	22½	31	39	54½	74½
Breaking Strain, pounds	3600	6700	9800	12500	14300	15700	21800	40000
Complete Wrench, each	2.50	3.50	5.00	7.00	9.00	11.00	18.00	40.00
Extra Chains, each	.75	1.00	1.50	2.50	3.50	4.50	7.50	20.00
Extra Jaws, pair	1.00	1.75	2.75	4.00	4.75	5.50	7.50	16.00
Extra Screws and Pins, set	.20	.22	.25	.30	.35	.40	.50	1.30

Made also with Cable Chain.



Fig. 4422
Agrippa Pipe and Fittings Wrench

With single jaw and flat link chain only, for turning or holding both pipe and fittings from $\frac{1}{8}$ to 12 inches diameter.
Especially designed for cramped and irregular fittings which cannot be effectively handled with broader wrenches.
Particularly serviceable on flanges, short nipples and right and left hand fittings.

Made entirely from Wrought Steel; the single jaw is tempered for file sharpening. All parts are interchangeable and replacements are carried in stock.

Each chain is proof tested up to two-thirds of its breaking strain as listed in table.

No.	20	21	22	23	23½	24	25
Fittings, inches	$\frac{1}{8}$ to $\frac{3}{4}$	$\frac{1}{8}$ to $1\frac{1}{2}$	$\frac{1}{4}$ to $2\frac{1}{2}$	$\frac{3}{4}$ to 4	1 to 6	$1\frac{1}{2}$ to 8	2 to 12
Extreme Length, inches	13¾	20	27	37	44½	50½	64½
Weight, pounds	2½	5¾	9¾	17	24	32	56
Length Chain, inches	10	15	19½	26	34	45	61
Breaking Strain, pounds	3600	6700	9800	12500	14300	15700	21800
Complete Wrench, each	2.50	3.50	5.00	7.00	9.00	11.00	18.00
Extra Chains, each	1.00	1.25	1.75	2.75	4.00	5.00	8.00
Extra Jaws, each	1.00	1.75	2.75	4.00	4.75	5.50	7.50

Stillson Wrenches and Parts

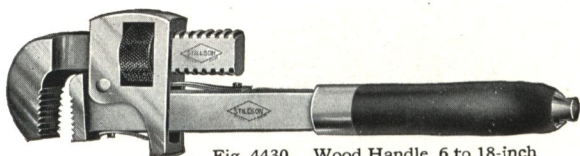


Fig. 4430. Wood Handle, 6 to 18-inch

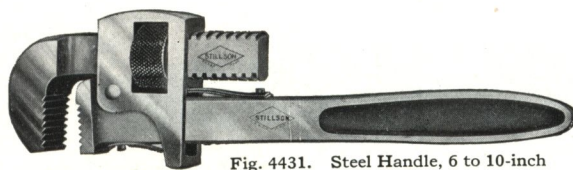


Fig. 4431. Steel Handle, 6 to 10-inch

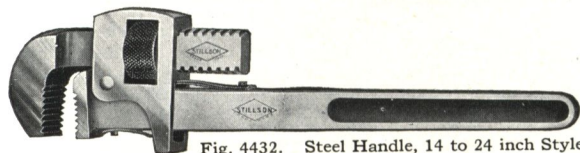


Fig. 4432. Steel Handle, 14 to 24 inch Style

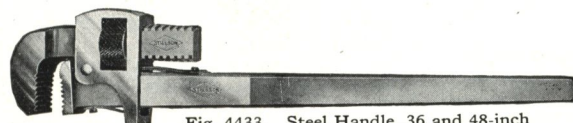


Fig. 4433. Steel Handle, 36 and 48-inch

Stillson Wrenches

Length, open, inches	6	8	10	14	18	24	36	48
Takes Pipe, inches	$\frac{1}{8}$ to $\frac{1}{2}$	$\frac{1}{8}$ to $\frac{3}{4}$	$\frac{1}{8}$ to 1	$\frac{1}{4}$ to $1\frac{1}{2}$	$\frac{1}{4}$ to 2	$\frac{1}{4}$ to $2\frac{1}{2}$	$\frac{1}{4}$ to $3\frac{1}{2}$	1 to 5
Each	2.00	2.25	2.50	3.50	5.00	7.25	13.50	20.00

10-inch and larger wrenches will always be sent with steel handles unless otherwise specified.

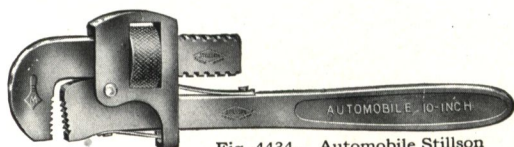


Fig. 4434. Automobile Stillson

Automobile Stillson Wrench

Length, inches	8	10
Takes Pipe, inches	$\frac{1}{8}$ to $\frac{3}{4}$	$\frac{1}{8}$ to 1
Polished, each	2.25	2.50

Stillson Parts—Bars



Fig. A. For Wood Handle, 6 to 18 inches



Fig. B. 6 to 10-inch, Steel Handle



Fig. C. 8 and 10-inch Automobile



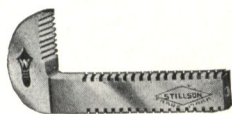
Fig. B. 14 to 24-inch, Steel Handle



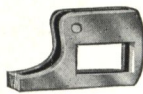
Fig. D. Steel Handle, 36 and 48-inch

Bars—With Springs

Size, inches	6	8	10	14	18	24	36	48
Fig. A, each	.95	1.00	1.10	1.50	2.25	....	....	....
Fig. B, each	....	1.00	1.10	1.50	....	....	....	....
Fig. C, each	....	1.00	1.10	....	2.25	3.50	7.00	10.50
Fig. D, each	....	....	....	....	....	....	....	....



Jaw



Frame



Wood Handle



Nut

Size, inches	6	8	10	14	18	24	36	48
Jaws, each	.75	.80	.85	1.15	1.75	2.25	4.35	7.50
Frames, each	.38	.42	.50	.60	.75	.95	1.70	2.20
Adjusting Nuts, each	.12	.15	.20	.30	.35	.55	1.10	1.50
Wood Handles, each	.16	.16	.18	.25	.28	....	....	....
End Nuts, each	.15	.15	.20	.20	.20	....	....	....
Frame Pins, each	.03	.03	.04	.04	.04	.04	.05	.05
Spring Rivets, each	.01	.01	.02	.02	.02	.02	.02	.02
Springs, each	.10	.10	.10	.10	.10	.11	.13	.13
Number of Springs to Each Wrench	1	1	3	3	3	3	1	1

No. 1

Size of Hex across flats, $\frac{3}{4}$ to $1\frac{7}{16}$ inches. Length open, 14 inches. Length closed, 13 inches.
Each..... 5.00

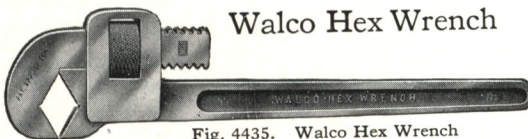


Fig. 4435. Walco Hex Wrench

Walco Hex Wrench

No. 2

Size of Hex across flats, $1\frac{1}{2}$ to $2\frac{7}{8}$ inches. Length open, 25 inches. Length closed, 23 inches.
Each..... 12.00

This is a perfect device for making up valves, cocks, bibbs and unions and making in or removing valve bonnets.

Trimo Pipe Wrenches

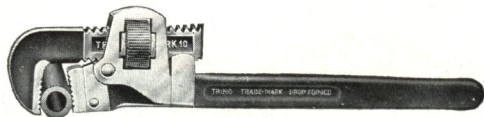


Fig. 4440. Trimo Pipe Wrench, Steel Handle

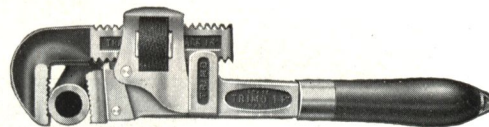


Fig. 4441. Wood Handle, 6, 8, 10, 14 inches

Trimo Pipe Wrenches and Parts

Length open, inches	6	8	10	14	18	24	36	48
Taking Pipe, inches	$\frac{1}{8}$ to $\frac{1}{2}$	$\frac{1}{8}$ to $\frac{3}{4}$	$\frac{1}{8}$ to 1	$\frac{1}{4}$ to $1\frac{1}{2}$	$\frac{1}{4}$ to 2	$\frac{1}{4}$ to $2\frac{1}{2}$	$\frac{1}{2}$ to $3\frac{1}{2}$	1 to 5
Wrenches, price each	2.00	2.25	2.50	3.50	5.00	7.25	13.50	20.00
Moveable Jaws, each	.75	.80	.85	1.15	1.75	2.25	4.35	7.50
Nuts, each	.12	.15	.20	.30	.35	.55	1.10	1.50
Insert Jaws, each	.35	.40	.50	.60	.70	.80	1.10	2.00
Frames, each	.38	.42	.50	.60	.75	.95	1.70	2.20
Springs, each	.03	.03	.03	.03	.04	.04	.04	.04
Frame Pins, each	.03	.03	.04	.04	.04	.04	.05	.05
Jaw Pins, each	.03	.03	.04	.04	.04	.04	.05	.05
Steel Handles, each	.95	1.00	1.10	1.50	2.25	3.50	7.00	10.50
Wood Handles with Ferrule, each	.16	.16	.18	.25	....	....	....	....
Nut Guards, per pair	.15	.15	.20	.30	.35	.45	.55	.65

Monkey Wrenches

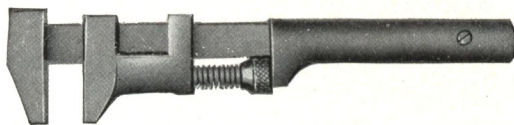


Fig. 4442. Monkey Wrench

Size, inches	6	8	10	12	15	18	21
Steel Handle, per dozen	10.00	12.00	14.00	18.00	24.00	32.00	39.00
Knife-Handle (Black), per dozen	9.00	10.00	12.00	14.00	24.00	30.00	36.00
Knife-Handle (Bright), per dozen	11.50	12.50	15.00	19.00	30.00	36.00	42.00

Key Model Monkey Wrench

Length Over All, inches	28	36	48	72
Opens, inches	$5\frac{1}{8}$	$6\frac{1}{4}$	$9\frac{1}{2}$	$12\frac{1}{4}$
Takes Hex Nut, inches	4	5	9	....
Weight, pounds	19	28	62	165
Price, each	10.50	22.00	55.00	On App.

Trimo Monkey Wrench and Parts

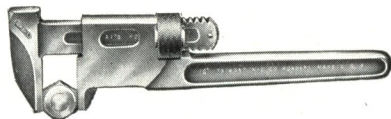


Fig. 4443. Trimo Monkey Wrench

Nut with
Guards Inserted

So constructed that the leverage increases in proportion to the increased size of the nut to which it is applied, as the movable jaw extends forward instead of toward the handle to adjust. Threads of both jaw and nut are rounded, rendering them practically indestructible. The nut guard is a new feature and keeps the adjustment perfect when once set.

Size, inches	6	8	10	12	15	18	21
Capacity (size nut), inches	$\frac{1\frac{1}{8}}{1\frac{1}{8}}$	$1\frac{3}{16}$	$1\frac{3}{4}$	$2\frac{1}{8}$	$2\frac{5}{8}$	$3\frac{1}{4}$	$4\frac{1}{8}$
Semi-Bright Wrenches, per dozen	10.00	12.00	14.00	18.00	24.00	32.00	39.00
Polished Wrenches, per dozen	14.00	16.00	19.00	24.00	32.00	42.00	51.00
Semi-Bright Jaw with Pin, each	.50	.60	.70	.80	1.20	1.35	1.65
Semi-Bright Handle with Housing, each	.50	.55	.65	.75	1.20	1.60	1.90
Semi-Bright Nut, each	.10	.10	.14	.18	.21	.25	.33
Semi-Bright Nut Guards, per pair	.15	.15	.20	.30	.35	.40	.45
Polished Jaw with Pin, each	.68	.80	.95	1.00	1.50	1.70	2.00
Polished Handle with Housing, each	.68	.74	.88	1.00	1.50	2.00	2.40

Westcott Wrenches



Fig. 4450. Smooth Jaw

No. 76	6-inch, opens to $\frac{3}{4}$ inch, each	.60
No. 78	8-inch, opens to 1 inch, each	.75
No. 80	10-inch, opens to $1\frac{3}{8}$ inches, each	1.00
No. 82	12-inch, opens to $1\frac{5}{8}$ inches, each	1.25
No. 84	14-inch, opens to 2 inches, each	1.75



Fig. 4451. Pipe Jaw

No. 76P	6-inch, takes pipe from $\frac{1}{8}$ to $\frac{3}{8}$ inch, each	.60
No. 78P	8-inch, takes pipe from $\frac{1}{8}$ to $\frac{3}{4}$ inch, each	.75
No. 80P	10-inch, takes pipe from $\frac{1}{8}$ to 1 inch, each	1.00
No. 82P	12-inch, takes pipe from $\frac{1}{8}$ to $1\frac{1}{4}$ inch, each	1.25
No. 84P	14-inch, takes pipe from $\frac{1}{8}$ to $1\frac{1}{2}$ inch, each	1.75

Adjustable "S" Wrenches



Fig. 4452. Nut Wrench



Fig. 4453. Pipe Wrench

Adjustable Nut Wrenches

Size, inches	6	8	10	12	14
Opens to, inches	$\frac{3}{4}$	1	$1\frac{3}{8}$	$1\frac{5}{8}$	2
Price per dozen	7.20	9.00	12.00	15.00	21.00

Adjustable "S" Pipe Wrenches

Size, inches	6	8	10	12	14
Grips	$\frac{1}{8}$ wire to $\frac{3}{8}$ pipe	$\frac{1}{8}$ wire to $\frac{3}{4}$ pipe	$\frac{1}{8}$ wire to 1 pipe	$\frac{1}{8}$ wire to $1\frac{1}{4}$ pipe	$\frac{1}{8}$ wire to $1\frac{1}{2}$ pipe
Price per dozen	7.20	9.00	12.00	15.00	21.00

Crocodile Wrenches

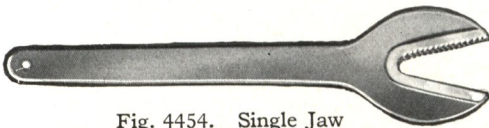


Fig. 4454. Single Jaw

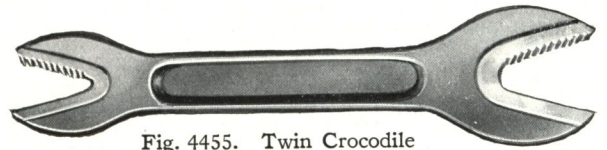


Fig. 4455. Twin Crocodile

No.	2	21	3	4	4	5
Length, inches	9	12	15	21	24	27
Holds Pipe, inches	$\frac{3}{8}$ - $\frac{3}{4}$	$\frac{3}{8}$ -1	$\frac{1}{2}$ - $1\frac{1}{4}$	$1\frac{1}{4}$ -2	$1\frac{1}{2}$ - $2\frac{1}{2}$	2-3
Holds Round Iron, inches	$\frac{1}{2}$ -1	$\frac{5}{8}$ - $1\frac{1}{4}$	$\frac{3}{4}$ - $1\frac{3}{8}$	$1\frac{1}{2}$ - $2\frac{1}{2}$	$1\frac{7}{8}$ - $3\frac{1}{4}$	$2\frac{1}{4}$ - $3\frac{1}{2}$
Single Jaw, per dozen	12.00	18.00	24.00	36.00	50.00	60.00
Twin Crocodile, length 10 inches, holds pipe $\frac{1}{8}$ - $\frac{3}{4}$, round iron $\frac{1}{4}$ -1, per dozen						18.00

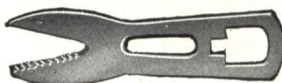
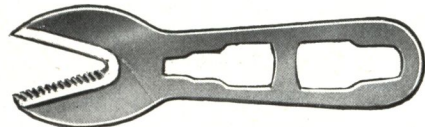


Fig. 4456

Fig. 4457. No. $1\frac{1}{2}$ and $1\frac{3}{4}$

Crocodile Wrenches

No.	0	1	21	1M	$1\frac{1}{2}$	$1\frac{3}{4}$
Length, inches	4	$5\frac{3}{4}$	$5\frac{3}{4}$	$5\frac{3}{4}$	$5\frac{3}{4}$	7
Holds Pipe, inches	$\frac{1}{8}$ - $\frac{1}{4}$	$\frac{1}{8}$ - $\frac{3}{8}$	$\frac{1}{8}$ - $\frac{3}{8}$	$\frac{1}{8}$ - $\frac{3}{8}$	$\frac{1}{8}$ - $\frac{3}{8}$	$\frac{1}{8}$ - $\frac{3}{4}$
Holds Round Iron, inches	$\frac{1}{4}$ - $\frac{9}{16}$	$\frac{1}{4}$ - $\frac{3}{4}$	$\frac{1}{4}$ - $\frac{3}{4}$	$\frac{1}{4}$ - $\frac{3}{4}$	$\frac{1}{4}$ - $\frac{3}{4}$	$\frac{3}{8}$ - $1\frac{1}{8}$
Price per dozen	3.00	4.00	8.00	10.00*	4.50	8.00

* Per Gross.

Nos. 0 and 1 and 21 Wrenches are stamped from high grade sheet steel. The teeth are milled and the jaws are carefully hardened.

Nos. 0 and 1 have black satin finish and polished jaws.

No. 21 is the same as No. 1, but is polished, case-hardened, mottled and lacquered. No. 1M is malleable iron, nickel-plated.

Nos. $1\frac{1}{2}$ and $1\frac{3}{4}$ are drop-forged, teeth milled diagonally and jaws hardened and polished.

Strap Wrenches and Vises

The Parmelee Wrench

Will make up nipples without damage to thread. Works in closest places. Takes new hold with slightest movement. Makes or breaks tightest joints. No teeth; does not mar brass pipe. Perfect ratchet action. Highest efficiency on any kind of pipe work.

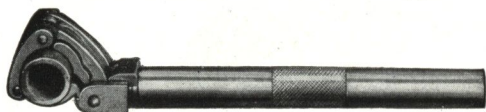


Fig. 4460. No. 1 Sleeve Lock



Fig. 4461. No. 1 Nut Lock

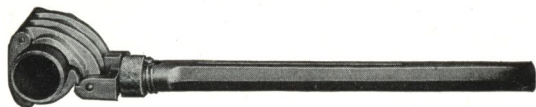


Fig. 4462. No. 2 Nut Lock

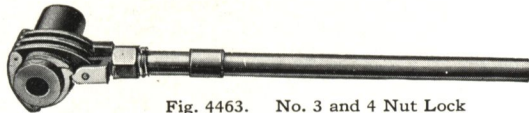


Fig. 4463. No. 3 and 4 Nut Lock

Price List—Parmelee Wrenches

No.	1	2	3	4
Length, inches	10	20	25	
Takes Pipe	$\frac{3}{8}$ to 1	1 to 2	2 to 3	3 and 4
Per Set	5.00	7.50	9.50	13.00
Wrench Without Girths, each	2.25	3.00	5.00	7.50

Extra Girths

No.	1	2	2	3	4	4
Size, inches	$\frac{3}{8}$ — $\frac{1}{2}$ — $\frac{3}{4}$ —1	1—1 $\frac{1}{4}$	1 $\frac{1}{2}$ —2	2—2 $\frac{1}{2}$ —3	3	4
Each	.75	1.00	1.25	1.50	2.50	3.00

Smooth Pipe Wrenches



Fig. 4464. Peerless

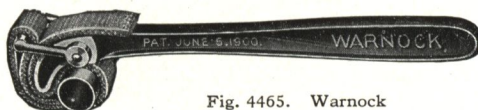


Fig. 4465. Warnock

Fig. 4464 is made from a steel drop forging. The patented cam locks the strap securely in any position and prevents the wrench from coming off the pipe if the operator's hand is removed. Also permits a ratchet movement of the wrench on the pipe. This and the cam lock are distinctive features. Strap is double woven linen, strong and durable, and can be reversed when it becomes worn. Will not crush the thinnest tube and cannot slip when properly adjusted.

No. 1, Pipe Sizes 2-inch and Smaller, each	2.00
No. 2, Pipe Sizes 3-inch and Smaller, each	2.50
Extra Straps, No. 1, each	.40
No. 2, each	.55

Fig. 4465—For polished or plated surfaces. Linen grip only in contact with pipe or tube, hence will not mar the finish. Unsurpassed for its simplicity, quickness of adjustment and strength of grip. Will not crush pipe or tube. Can be used in close quarters and as a ratchet.

12-inch Wrench, $\frac{1}{8}$ to 2-inch Pipe, complete, each	1.50	Extra Straps, each	.25
18-inch Wrench, 1 to 5-inch Pipe, complete, each	2.50	Extra Straps, each	.50

Strap Vises for Smooth Pipe

Fig. 4466 is a new departure in vises for holding pipe or tubing with polished or plated surface.

Instantly adjustable for all sizes of pipe from $\frac{1}{8}$ to 2-inch.

A heavy unbreakable strap insures a positive grip without injury to the surface.

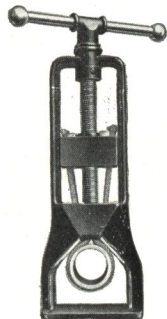


Fig. 4467. Strap Vise

Vises, $\frac{1}{8}$ to 2-inch Pipe, each	4.00
Straps, each	.50

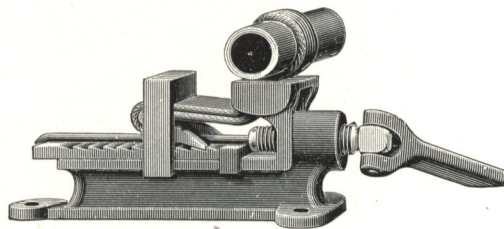


Fig. 4466. Strap Vise

Fig. 4467 Strap Pipe Vise is used for holding all kinds of nickel-plated and polished pipe and tubing without marring. Handle is out of the way and is easily used without regard to the position of the vise on the bench.

There are no bushings to lose and no time is required for changing to different sizes.

It is always ready for any size within its capacity.

Strap Vise, $\frac{1}{8}$ to 2-inch Pipe, each	4.00
Straps, each	.50

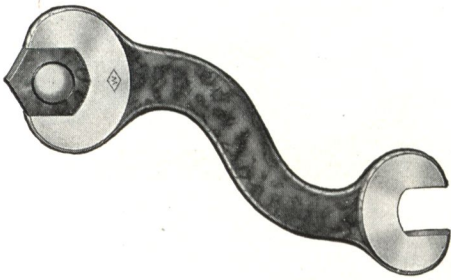
"S" Wrenches With Flat Handle, $22\frac{1}{2}^{\circ}$ Angle, Double Head

Fig. 4470. For U. S. Standard Nuts

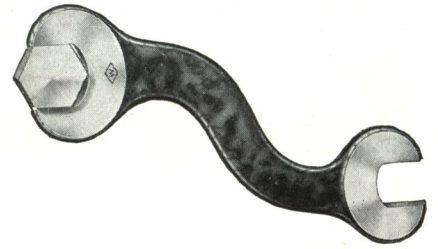


Fig. 4471. For Hexagon Cap Screws

Fig. 4470. For U. S. Standard Nuts

No.	For U. S. Standard Nuts Size Bolts	Openings Milled	Extreme Length	Thickness Heads	Price		
					Unfinished	Semi-Finished	Finished
661A	$\frac{1}{8}$ & $\frac{3}{16}$	$\frac{5}{16}$ & $\frac{13}{32}$	4	$\frac{9}{32}$	.15	.22	.32
661B	$\frac{1}{8}$ & $\frac{1}{4}$	$\frac{5}{16}$ & $\frac{1}{2}$	4	$\frac{9}{32}$	.15	.22	.32
661C	$\frac{3}{16}$ & $\frac{1}{4}$	$\frac{3}{8}$ & $\frac{1}{2}$	4	$\frac{9}{32}$	.15	.22	.32
662A	$\frac{3}{16}$ & $\frac{5}{16}$	$\frac{3}{8}$ & $\frac{3}{4}$	5	$\frac{5}{16}$	.20	.29	.42
662B	$\frac{1}{4}$ & $\frac{5}{16}$	$\frac{1}{2}$ & $\frac{3}{4}$	5	$\frac{5}{16}$	.20	.29	.42
662C	$\frac{1}{4}$ & $\frac{3}{8}$	$\frac{1}{2}$ & $\frac{11}{16}$	5	$\frac{5}{16}$	.20	.29	.42
663A	$\frac{5}{16}$ & $\frac{3}{8}$	$\frac{3}{4}$ & $\frac{11}{16}$	$6\frac{1}{4}$	$\frac{5}{16}$	.27	.39	.56
663B	$\frac{5}{16}$ & $\frac{7}{16}$	$\frac{11}{16}$ & $\frac{23}{32}$	$6\frac{1}{4}$	$\frac{3}{8}$	.27	.39	.56
663C	$\frac{3}{8}$ & $\frac{7}{16}$	$\frac{11}{16}$ & $\frac{23}{32}$	$6\frac{1}{4}$	$\frac{3}{8}$	.27	.39	.56
664A	$\frac{3}{8}$ & $\frac{1}{2}$	$\frac{11}{16}$ & $\frac{7}{8}$	$7\frac{1}{2}$	$\frac{7}{16}$	.37	.53	.75
664B	$\frac{1}{2}$ & $\frac{1}{2}$	$\frac{3}{4}$ & $\frac{7}{8}$	$7\frac{1}{2}$	$\frac{7}{16}$	.37	.53	.75
664C	$\frac{7}{16}$ & $\frac{9}{16}$	$\frac{23}{32}$ & $\frac{31}{32}$	$7\frac{1}{2}$	$\frac{7}{16}$	.37	.53	.75
665A	$\frac{1}{2}$ & $\frac{9}{16}$	$\frac{7}{8}$ & $\frac{31}{32}$	9	$\frac{1}{2}$	.50	.72	1.00
665B	$\frac{1}{2}$ & $\frac{5}{8}$	$\frac{7}{8}$ & $1\frac{1}{16}$	9	$\frac{1}{2}$	.50	.72	1.00
665C	$\frac{9}{16}$ & $\frac{5}{8}$	$\frac{31}{32}$ & $1\frac{1}{16}$	9	$\frac{1}{2}$	.50	.72	1.00
666A	$\frac{9}{16}$ & $\frac{3}{4}$	$\frac{31}{32}$ & $1\frac{1}{4}$	$10\frac{1}{2}$	$\frac{9}{16}$	.74	1.00	1.35
666B	$\frac{5}{8}$ & $\frac{3}{4}$	$1\frac{1}{16}$ & $1\frac{1}{4}$	$10\frac{1}{2}$	$\frac{9}{16}$	.74	1.00	1.35
666C	$\frac{5}{8}$ & $\frac{7}{8}$	$1\frac{1}{16}$ & $1\frac{7}{8}$	$10\frac{1}{2}$	$\frac{9}{16}$	.74	1.00	1.35
667A	$\frac{3}{4}$ & $\frac{7}{8}$	$1\frac{1}{4}$ & $1\frac{7}{8}$	12	$\frac{5}{8}$	1.10	1.45	1.90
667B	$\frac{3}{4}$ & 1	$1\frac{1}{4}$ & $1\frac{5}{8}$	12	$\frac{5}{8}$	1.10	1.45	1.90
667C	$\frac{7}{8}$ & 1	$1\frac{1}{16}$ & $1\frac{5}{8}$	12	$\frac{5}{8}$	1.10	1.45	1.90
668A	$\frac{7}{8}$ & $1\frac{1}{8}$	$1\frac{1}{16}$ & $1\frac{13}{16}$	14	$\frac{3}{4}$	1.90	2.50	3.20
668B	1 & $1\frac{1}{8}$	$1\frac{5}{8}$ & $1\frac{13}{16}$	14	$\frac{3}{4}$	1.90	2.50	3.20
668C	1 & $1\frac{1}{4}$	$1\frac{5}{8}$ & 2	14	$\frac{3}{4}$	1.90	2.50	3.20

Fig. 4471. For Hexagon Cap Screws

No.	For Hexagon Head Cap Screws Diameter Screws	Openings Milled	Extreme Length	Thickness Heads	Price		
					Unfinished	Semi-Finished	Finished
661D	$\frac{1}{8}$ & $\frac{3}{16}$	$\frac{5}{16}$ & $\frac{3}{8}$	4	$\frac{9}{32}$	.15	.22	.32
661E	$\frac{1}{8}$ & $\frac{1}{4}$	$\frac{5}{16}$ & $\frac{7}{16}$	4	$\frac{9}{32}$	.15	.22	.32
661F	$\frac{3}{16}$ & $\frac{1}{4}$	$\frac{3}{8}$ & $\frac{7}{16}$	4	$\frac{9}{32}$	.15	.22	.32
661G	$\frac{3}{16}$ & $\frac{5}{16}$	$\frac{3}{8}$ & $\frac{1}{2}$	4	$\frac{9}{32}$	.15	.22	.32
662D	$\frac{1}{4}$ & $\frac{5}{16}$	$\frac{7}{16}$ & $\frac{9}{16}$	5	$\frac{5}{16}$	.20	.29	.42
662E	$\frac{1}{4}$ & $\frac{3}{8}$	$\frac{7}{16}$ & $\frac{1}{2}$	5	$\frac{5}{16}$	.20	.29	.42
662F	$\frac{5}{16}$ & $\frac{3}{8}$	$\frac{1}{2}$ & $\frac{9}{16}$	5	$\frac{5}{16}$	.20	.29	.42
662G	$\frac{5}{16}$ & $\frac{7}{16}$	$\frac{1}{2}$ & $\frac{5}{8}$	5	$\frac{5}{16}$	.20	.29	.42
663D	$\frac{3}{8}$ & $\frac{7}{16}$	$\frac{9}{16}$ & $\frac{5}{8}$	$6\frac{1}{4}$	$\frac{3}{8}$	.27	.39	.56
663E	$\frac{3}{8}$ & $\frac{1}{2}$	$\frac{9}{16}$ & $\frac{3}{4}$	$6\frac{1}{4}$	$\frac{3}{8}$	.27	.39	.56
663F	$\frac{7}{16}$ & $\frac{1}{2}$	$\frac{5}{8}$ & $\frac{3}{4}$	$6\frac{1}{4}$	$\frac{3}{8}$	.27	.39	.56
663G	$\frac{7}{16}$ & $\frac{9}{16}$	$\frac{5}{8}$ & $\frac{13}{16}$	$6\frac{1}{4}$	$\frac{3}{8}$	.27	.39	.56
664D	$\frac{1}{2}$ & $\frac{9}{16}$	$\frac{5}{8}$ & $\frac{13}{16}$	$7\frac{1}{2}$	$\frac{7}{16}$	.37	.53	.75
664E	$\frac{1}{2}$ & $\frac{5}{8}$	$\frac{3}{4}$ & $\frac{7}{8}$	$7\frac{1}{2}$	$\frac{7}{16}$	.37	.53	.75
664F	$\frac{9}{16}$ & $\frac{5}{8}$	$\frac{13}{16}$ & $\frac{7}{8}$	$7\frac{1}{2}$	$\frac{7}{16}$	.37	.53	.75
665D	$\frac{9}{16}$ & $\frac{3}{4}$	$\frac{13}{16}$ & 1	9	$\frac{1}{2}$	.50	.72	1.00
665E	$\frac{5}{8}$ & $\frac{3}{4}$	$\frac{7}{8}$ & 1	9	$\frac{1}{2}$	.50	.72	1.00
665F	$\frac{5}{8}$ & $\frac{7}{8}$	$\frac{7}{8}$ & $1\frac{1}{16}$	9	$\frac{1}{2}$	.50	.72	1.00
665G	$\frac{3}{4}$ & $\frac{7}{8}$	1 & $1\frac{1}{8}$	9	$\frac{1}{2}$	.50	.72	1.00
666D	$\frac{3}{4}$ & 1	1 & $1\frac{1}{4}$	$10\frac{1}{2}$	$\frac{9}{16}$	.74	1.00	1.35
666E	$\frac{7}{8}$ & 1	$1\frac{1}{8}$ & $1\frac{1}{4}$	$10\frac{1}{2}$	$\frac{9}{16}$	.74	1.00	1.35
666F	$\frac{7}{8}$ & $1\frac{1}{8}$	$1\frac{1}{8}$ & $1\frac{3}{8}$	$10\frac{1}{2}$	$\frac{9}{16}$	.74	1.00	1.35
667D	1 & $1\frac{1}{8}$	$1\frac{1}{4}$ & $1\frac{3}{8}$	12	$\frac{5}{8}$	1.10	1.45	1.90
667E	1 & $1\frac{1}{4}$	$1\frac{1}{4}$ & $1\frac{1}{2}$	12	$\frac{5}{8}$	1.10	1.45	1.90
667F	$1\frac{1}{8}$ & $1\frac{1}{4}$	$1\frac{5}{8}$ & $1\frac{1}{2}$	12	$\frac{5}{8}$	1.10	1.45	1.90

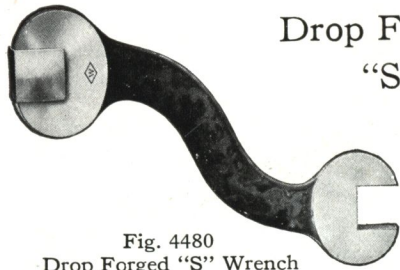


Fig. 4480
Drop Forged "S" Wrench

Drop Forged Flat Handle "S" Wrenches

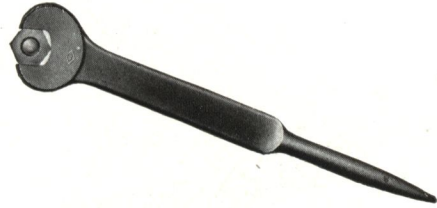


Fig. 4481
Construction Wrench

22½° Angle, Double Head—For Set Screws and Square Head Cap Screws

Number	For Set Screws Sizes	For Square Head Cap Screws Diameter Screws	Openings Milled	Extreme Length	Thickness Heads	Unfinished Each	Semi- Finished Each	Finished Each
661H	1/4" & 3/8"	.....	1/4" & 3/8"	4	3/16"	.15	.22	.32
661J	1/4" & 3/8"	.....	1/4" & 3/8"	4	3/16"	.15	.22	.32
661K	1/4" & 3/8"	.....	1/4" & 3/8"	4	3/16"	.15	.22	.32
661L	1/4" & 3/8"	.....	1/4" & 3/8"	4	3/16"	.15	.22	.32
662H	1/4" & 3/8"	.....	1/4" & 3/8"	5	3/16"	.20	.29	.42
662J	1/4" & 3/8"	.....	1/4" & 3/8"	5	3/16"	.20	.29	.42
662K	1/4" & 3/8"	.....	1/4" & 3/8"	5	3/16"	.20	.29	.42
662L	1/4" & 3/8"	.....	1/4" & 3/8"	5	3/16"	.20	.29	.42
663H	1/2" & 5/8"	.....	1/2" & 5/8"	6 1/4"	3/8"	.27	.39	.56
663J	1/2" & 5/8"	.....	1/2" & 5/8"	6 1/4"	3/8"	.27	.39	.56
663K	1/2" & 5/8"	.....	1/2" & 5/8"	6 1/4"	3/8"	.27	.39	.56
663P	1/2" & 5/8"	.....	1/2" & 5/8"	7 1/2"	3/8"	.37	.53	.75
664H	1/2" & 5/8"	.....	1/2" & 5/8"	7 1/2"	3/8"	.37	.53	.75
664J	1/2" & 5/8"	.....	1/2" & 5/8"	7 1/2"	3/8"	.37	.53	.75
664K	1/2" & 5/8"	.....	1/2" & 5/8"	7 1/2"	3/8"	.37	.53	.75
664P	1/2" & 5/8"	.....	1/2" & 5/8"	7 1/2"	3/8"	.37	.53	.75
664R	1/2" & 5/8"	.....	1/2" & 5/8"	7 1/2"	3/8"	.37	.53	.75
665H	3/4" & 1"	.....	3/4" & 1"	9	1/2"	.50	.72	1.00
665J	3/4" & 1"	.....	3/4" & 1"	9	1/2"	.50	.72	1.00
665K	3/4" & 1"	.....	3/4" & 1"	9	1/2"	.50	.72	1.00
666P	3/4" & 1 1/8"	.....	3/4" & 1 1/8"	10 1/2"	1/2"	.74	1.00	1.35
666H	3/4" & 1 1/8"	.....	3/4" & 1 1/8"	10 1/2"	1/2"	.74	1.00	1.35
666R	3/4" & 1 1/8"	.....	3/4" & 1 1/8"	10 1/2"	1/2"	.74	1.00	1.35
666J	1" & 1 1/8"	.....	1" & 1 1/8"	10 1/2"	1/2"	.74	1.00	1.35
666K	1" & 1 1/8"	.....	1" & 1 1/8"	10 1/2"	1/2"	.74	1.00	1.35
667H	1 1/8" & 1 1/4"	.....	1 1/8" & 1 1/4"	12	5/8"	1.10	1.45	1.90
667P	1 1/8" & 1 1/4"	.....	1 1/8" & 1 1/4"	12	5/8"	1.10	1.45	1.90
667R	1" & 1 1/8"	.....	1 1/4" & 1 3/8"	12	5/8"	1.10	1.45	1.90
668P	1" & 1 1/4"	.....	1 1/4" & 1 1/2"	14	3/4"	1.90	2.50	3.20
668R	1 1/8" & 1 1/4"	.....	1 1/8" & 1 1/2"	14	3/4"	1.90	2.50	3.20
860H	1/4" & 3/8"	.....	1/4" & 3/8"	3 5/8"	1/4"	.15	.22	.32
860J	1/4" & 3/8"	.....	1/4" & 3/8"	3 5/8"	1/4"	.15	.22	.32
860K	1/4" & 3/8"	.....	1/4" & 3/8"	3 5/8"	1/4"	.15	.22	.32
861H	1/4" & 3/8"	.....	1/4" & 3/8"	5	3/16"	.20	.29	.42
861J	1/4" & 3/8"	.....	1/4" & 3/8"	5	3/16"	.20	.29	.42
862H	1/4" & 3/8"	.....	1/4" & 3/8"	5 7/8"	3/16"	.22	.32	.50
862J	1/4" & 3/8"	.....	1/4" & 3/8"	5 7/8"	3/16"	.22	.32	.50
862K	1/4" & 3/8"	.....	1/4" & 3/8"	5 7/8"	3/16"	.22	.32	.50
863H	1/2" & 5/8"	.....	1/2" & 5/8"	6 1/2"	3/8"	.28	.40	.60
863J	1/2" & 5/8"	.....	1/2" & 5/8"	6 1/2"	3/8"	.28	.40	.60
864H	1/2" & 5/8"	.....	1/2" & 5/8"	7 1/4"	3/8"	.37	.53	.75
864P	1/2" & 5/8"	.....	1/2" & 5/8"	7 1/4"	3/8"	.37	.53	.75
864J	1/2" & 5/8"	.....	1/2" & 5/8"	7 1/4"	3/8"	.37	.53	.75
864R	1/2" & 5/8"	.....	1/2" & 5/8"	7 1/4"	3/8"	.37	.53	.75
865H	3/4" & 1"	.....	3/4" & 1"	8 1/8"	1/2"	.50	.72	1.00
865J	3/4" & 1"	.....	3/4" & 1"	8 1/8"	1/2"	.50	.72	1.00
865P	3/4" & 1"	.....	3/4" & 1"	8 1/8"	1/2"	.50	.72	1.00
865R	3/4" & 1"	.....	3/4" & 1"	8 1/8"	1/2"	.50	.72	1.00
865K	3/4" & 1"	.....	3/4" & 1"	8 1/8"	1/2"	.50	.72	1.00
866H	3/4" & 1 1/8"	.....	3/4" & 1 1/8"	10	1/2"	.74	1.00	1.35
866J	3/4" & 1 1/8"	.....	3/4" & 1 1/8"	10	1/2"	.74	1.00	1.35
867H	1" & 1 1/8"	.....	1" & 1 1/8"	11 1/2"	1/2"	1.10	1.45	1.90
867J	1" & 1 1/8"	.....	1" & 1 1/8"	11 1/2"	1/2"	1.10	1.45	1.90
867K	1" & 1 1/8"	.....	1" & 1 1/8"	11 1/2"	1/2"	1.10	1.45	1.90
867L	1 1/8" & 1 1/4"	.....	1 1/8" & 1 1/4"	11 1/2"	1/2"	1.10	1.45	1.90
868P	1 1/8" & 1 1/4"	.....	1 1/8" & 1 1/4"	14 1/2"	3/4"	1.70	2.30	3.00
868N	1 1/8" & 1 1/4"	.....	1 1/8" & 1 1/4"	14 1/2"	3/4"	1.70	2.30	3.00
868R	1 1/8" & 1 1/4"	.....	1 1/8" & 1 1/4"	14 1/2"	3/4"	1.70	2.30	3.00
868U	1 1/8" & 1 1/4"	.....	1 1/8" & 1 1/4"	14 1/2"	3/4"	1.70	2.30	3.00
868Y	1 1/8" & 1 1/4"	.....	1 1/8" & 1 1/4"	14 1/2"	3/4"	1.70	2.30	3.00

Construction Wrenches—15° Angle

Number	Old Number	For U. S. Standard Nut Size Bolt	Openings Milled	Extreme Length	Thickness Heads	Unfinished Each	Semi-Finished Each
201	221	1/4"	1/4"	8	3/16"	.28	.35
202	222	1/4"	1/4"	8	3/16"	.28	.35
203	223	1/4"	1/4"	9 1/2"	3/16"	.35	.45
204	224	1/4"	1/4"	9 1/2"	3/16"	.35	.45
205	225	1/4"	1/4"	11	1/2"	.45	.58
206	226	1/4"	1/4"	11	1/2"	.45	.58
207	227	1/4"	1/4"	13	1/2"	.62	.80
208	228	1/4"	1/4"	15	1/2"	.86	1.10
209	229	1/4"	1/4"	17	1/2"	1.18	1.50
210	230	1 1/8"	1 1/8"	19	3/4"	1.60	2.10
211	...	1 1/8"	1 1/8"	21	3/4"	2.20	3.00
212	...	1 1/4"	2	21	7/8"	2.20	3.00

Drop Forged Engineers' Wrenches

15° Angle



Fig. 4490. Single Head Wrench



Fig. 4491. Double Head Wrench

State whether Unfinished, Semi-Finished or Finished Wrenches are desired, and order by number.

Unfinished Wrench forgings are milled only.

Semi-Finished Wrench forgings are milled, case-hardened, black lacquered and have heads ground bright.

Finished Wrench forgings are milled, polished, case-hardened (mottled) and lacquered—heads bright.

The following Semi-Finished and Finished Wrenches have hole in end of handle.

No.....	17	18	19	19A	20	20A	21A	21B	21C	22A	22B
Hole.....	$\frac{9}{16}$	$\frac{3}{4}$	$\frac{7}{8}$	$\frac{7}{8}$	1	1	$1\frac{1}{8}$	$1\frac{1}{8}$	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{1}{4}$

Fig. 4490. Single Head Engineers' Wrenches

No.	For U. S. Standard Nut Size Bolt	Opening Milled	Extreme Length Inches	Unfinished	Semi-Finished	Finished
00	$\frac{1}{8}$	$\frac{1}{8}$	3	.09	.14	.22
0	$\frac{1}{8}$	$\frac{1}{8}$	$3\frac{1}{2}$	.10	.15	.25
1	$\frac{1}{4}$	$\frac{1}{4}$	4	.12	.18	.28
2	$\frac{1}{4}$	$\frac{1}{4}$	$4\frac{3}{8}$	.15	.22	.32
3	$\frac{3}{8}$	$\frac{3}{8}$	$5\frac{3}{8}$	.18	.26	.38
4	$\frac{1}{2}$	$\frac{1}{2}$	$6\frac{1}{2}$	.22	.32	.45
5	$\frac{1}{2}$	$\frac{1}{2}$	$7\frac{1}{2}$	.26	.38	.54
6	$\frac{3}{4}$	$\frac{3}{4}$	$8\frac{3}{8}$	.31	.46	.65
7	$\frac{5}{8}$	$1\frac{1}{8}$	$9\frac{1}{2}$	.40	.57	.82
8	$\frac{3}{4}$	$1\frac{1}{8}$	$11\frac{1}{8}$	.55	.75	1.05
9	$\frac{7}{8}$	$1\frac{1}{8}$	13	.85	1.15	1.52
10	1	$1\frac{5}{8}$	$14\frac{3}{4}$	1.20	1.60	2.10
11	$1\frac{1}{8}$	$1\frac{1}{8}$	$16\frac{1}{2}$	1.65	2.10	2.80
12	$1\frac{1}{4}$	2	$18\frac{1}{2}$	2.20	2.85	3.70
13	$1\frac{3}{8}$	$2\frac{1}{8}$	20	2.80	3.65	4.70
14	$1\frac{1}{2}$	$2\frac{3}{8}$	22	3.45	4.60	5.80
15	$1\frac{5}{8}$	$2\frac{1}{2}$	$24\frac{1}{2}$	4.15	5.60	7.10
16	$1\frac{3}{4}$	$2\frac{3}{4}$	25	4.90	6.70	8.50
16A	$1\frac{7}{8}$	$2\frac{1}{2}$	$27\frac{1}{2}$	4.90	6.70	8.50
17	$2\frac{1}{8}$	$3\frac{1}{8}$	29	7.50	10.25	13.00
18	$2\frac{1}{4}$	$3\frac{1}{2}$	33	11.50	14.75	18.00
19	$2\frac{1}{2}$	$3\frac{7}{8}$	37	17.00	21.00	25.00
19A	$2\frac{3}{4}$	$4\frac{1}{4}$	39	17.00	21.00	25.00
20	$3\frac{1}{8}$	$4\frac{3}{8}$	41	25.00	31.00	37.00
20A	$3\frac{1}{4}$	5	43	25.00	31.00	37.00
21A	$3\frac{1}{2}$	$5\frac{3}{8}$	45	40.00	52.00	64.00
21B	$3\frac{3}{4}$	$5\frac{3}{4}$	47	40.00	52.00	64.00
21C	$4\frac{1}{2}$	$6\frac{1}{8}$	49	40.00	52.00	64.00
22A	$5\frac{1}{2}$	$6\frac{7}{8}$	51	80.00	102.00	124.00
22B	5	$7\frac{3}{8}$	53	80.00	102.00	124.00

Fig. 4491. Double Head Engineers' Wrenches

No.	For U. S. Standard Nut Size Bolts	Openings Milled	Extreme Length Inches	Unfinished	Semi-Finished	Finished
21	$\frac{1}{8}$ & $\frac{1}{8}$	$\frac{1}{8}$ & $\frac{1}{8}$	3 $\frac{1}{2}$	.12	.17	.26
22	$\frac{1}{8}$ & $\frac{1}{4}$	$\frac{1}{8}$ & $\frac{1}{4}$	4	.14	.21	.32
23	$\frac{1}{8}$ & $\frac{1}{4}$	$\frac{1}{8}$ & $\frac{1}{4}$	4	.14	.21	.32
24	$\frac{1}{8}$ & $\frac{1}{2}$	$\frac{1}{8}$ & $\frac{1}{2}$	4 $\frac{7}{8}$	.17	.25	.38
25	$\frac{1}{4}$ & $\frac{1}{2}$	$\frac{1}{4}$ & $\frac{1}{2}$	4 $\frac{7}{8}$	.17	.25	.38
26	$\frac{1}{4}$ & $\frac{3}{8}$	$\frac{1}{4}$ & $\frac{3}{8}$	5 $\frac{7}{8}$	.21	.31	.46
27	$\frac{3}{8}$ & $\frac{3}{8}$	$\frac{3}{8}$ & $\frac{3}{8}$	5 $\frac{7}{8}$	.21	.31	.46
28	$\frac{3}{8}$ & $\frac{7}{8}$	$\frac{3}{8}$ & $\frac{7}{8}$	6 $\frac{7}{8}$	.25	.37	.56
29	$\frac{3}{8}$ & $\frac{1}{2}$	$\frac{1}{4}$ & $\frac{2}{3}$	6 $\frac{7}{8}$	.25	.37	.56
30	$\frac{3}{8}$ & $\frac{1}{2}$	$\frac{1}{4}$ & $\frac{2}{3}$	7 $\frac{3}{4}$	.30	.45	.68
31	$\frac{1}{2}$ & $\frac{1}{2}$	$\frac{1}{2}$ & $\frac{2}{3}$	7 $\frac{3}{4}$	.30	.45	.68
32	$\frac{1}{2}$ & $\frac{1}{2}$	$\frac{1}{2}$ & $\frac{2}{3}$	8 $\frac{3}{4}$	.37	.55	.85
33	$\frac{1}{2}$ & $\frac{1}{2}$	$\frac{1}{2}$ & $\frac{2}{3}$	8 $\frac{3}{4}$	.37	.55	.85
34	$\frac{1}{2}$ & $\frac{5}{8}$	$\frac{7}{8}$ & $1\frac{1}{8}$	9 $\frac{3}{4}$	.46	.68	1.08
35	$\frac{1}{2}$ & $\frac{5}{8}$	$\frac{7}{8}$ & $1\frac{1}{8}$	9 $\frac{3}{4}$	.46	.68	1.08
36	$\frac{5}{8}$ & $\frac{3}{4}$	$1\frac{1}{8}$ & $1\frac{1}{4}$	11 $\frac{1}{2}$	.66	.96	1.40
37	$\frac{5}{8}$ & $\frac{3}{4}$	$1\frac{1}{8}$ & $1\frac{1}{4}$	11 $\frac{1}{2}$	.66	.96	1.40
38	$\frac{5}{8}$ & 1	$1\frac{1}{8}$ & $1\frac{1}{2}$	13 $\frac{1}{2}$	1.00	1.40	1.90
39	$\frac{3}{4}$ & $\frac{7}{8}$	$1\frac{1}{4}$ & $1\frac{1}{2}$	13 $\frac{1}{2}$	1.00	1.40	1.90
40	$\frac{3}{4}$ & 1	$1\frac{1}{4}$ & $1\frac{5}{8}$	15 $\frac{1}{2}$	1.40	1.90	2.60
41	$\frac{7}{8}$ & 1	$1\frac{1}{8}$ & $1\frac{5}{8}$	15 $\frac{1}{2}$	1.40	1.90	2.60
42	$\frac{7}{8}$ & $1\frac{1}{8}$	$1\frac{1}{8}$ & $1\frac{5}{8}$	17	1.90	2.65	3.50
43	1 & $1\frac{1}{8}$	$1\frac{1}{8}$ & $1\frac{5}{8}$	17	1.90	2.65	3.50
44	1 & $1\frac{1}{4}$	$1\frac{1}{8}$ & 2	2.60	3.60	4.70	
45	$1\frac{1}{8}$ & $1\frac{1}{4}$	$1\frac{1}{8}$ & 2	2.60	3.60	4.70	
46	$1\frac{1}{8}$ & $1\frac{3}{8}$	$1\frac{1}{8}$ & $2\frac{1}{8}$	3.80	5.25	6.70	
47	$1\frac{1}{4}$ & $1\frac{3}{8}$	2 & $2\frac{1}{8}$	3.80	5.25	6.70	
48	$1\frac{1}{4}$ & $1\frac{1}{2}$	2 & $2\frac{3}{8}$	5.20	7.00	8.80	
49	$1\frac{3}{8}$ & $1\frac{1}{2}$	2 $\frac{1}{8}$ & $2\frac{3}{8}$	5.20	7.00	8.80	

Larger sizes and other patterns kept in stock.

Single Head Socket Wrenches

With or Without Pin Handle

For Square Nuts, Cap Screws and Set Screws

Unfinished are broached only.

Semi-Finished are broached, edges ground and case-hardened all over.

Finished are broached, polished all over, case-hardened and lacquered.

Hexagon end of shank is designed for use in combination with another wrench or with pin handle.

Unless otherwise specified, wrenches with pin handles will be furnished.



Fig. 4500. Straight Pattern With Pin Handle (Square)



Fig. 4501. Offset Pattern (Square)

Square Openings							Price					
No.	For Set Screw Size	For Cap Screw Diam. Screw	For U. S. Standard Nut Size Bolt	Broached Opening	Diam. of Head	Hexagon End same Size as U. S. Nut For Size Bolt	Unfinished		Semi-Finished		Finished	
							Either Offset or Straight No Pin Handle	With Pin Handle and Hole	Either Offset or Straight No Pin Handle	With Pin Handle and Hole	Either Offset or Straight No Pin Handle	With Pin Handle and Hole
960H	1/8	...	...	1/8	1 1/8	1/8	.18	.26	.27	.35	.36	.44
961H	3/16	...	...	3/16	1 1/4	3/16	.20	.30	.30	.40	.40	.50
961J	1/4	...	...	1/4	1 1/2	1/4	.20	.30	.30	.40	.40	.50
962H	5/16	...	...	5/16	1 3/8	5/16	.22	.33	.33	.44	.44	.55
963H	3/8	...	...	3/8	1 1/2	3/8	.24	.37	.36	.49	.48	.61
965H	7/16	...	...	7/16	1 5/8	7/16	.29	.43	.44	.58	.58	.72
966H	1/2	...	1/4	1/2	1 7/8	1/2	.32	.47	.48	.63	.64	.79
967H	5/8	...	...	5/8	2	5/8	.36	.53	.54	.71	.72	.89
967X	...	...	5/8	...	1 1/8	1/2	.36	.53	.54	.71	.72	.89
968H	3/4	...	...	3/4	1 1/4	3/4	.40	.57	.60	.77	.80	.97
968P	...	...	3/8	...	1 1/4	1/2	.40	.57	.60	.77	.80	.97
969H	7/8	...	...	7/8	1 3/4	7/8	.46	.64	.69	.87	.92	1.10
970X	...	...	1/8	...	1 1/2	5/8	.52	.72	.78	.98	1.04	1.24
971H	...	...	3/4	...	1 5/8	5/8	.60	.80	.90	1.10	1.20	1.40
971X	...	...	1/8	...	1 5/8	5/8	.60	.80	.90	1.10	1.20	1.40
973H	1	...	...	1	1 7/8	3/4	.80	1.10	1.20	1.50	1.60	1.90
974X	...	...	5/8	1	2	7/8	.90	1.25	1.35	1.70	1.80	2.15
974H	1 1/8	3/8	...	1	2 1/4	7/8	.90	1.25	1.35	1.70	1.80	2.15
976H	1 1/4	1	3/4	...	2 3/4	1	1.15	1.55	1.72	2.12	2.30	2.70
977N	...	1 1/8	...	1	2 1/2	1 1/8	1.30	1.75	1.95	2.40	2.60	3.05
977X	...	...	7/8	1	2 1/2	1 1/8	1.30	1.75	1.95	2.40	2.60	3.05
977P	...	1 1/8	...	1	2 1/2	1 1/8	1.30	1.75	1.95	2.40	2.60	3.05
978P	...	1 3/4	...	1	2 3/4	1 1/8	1.60	2.05	2.40	2.85	3.20	3.65
979X	...	...	1 1/8	1	3	1 1/4	2.10	2.60	3.15	3.65	4.20	4.70
980X	...	...	1 1/4	2	3	1 3/8	2.80	3.45	4.20	4.85	5.60	6.25

Single Head Socket Wrenches

For Hexagon Nuts and Cap Screws



Fig. 4502. Straight Pattern With Pin Handle (Hexagon)



Fig. 4503. Offset Pattern (Hexagon)

Hexagon Openings						Price					
No.	For U. S. Standard Nut Size Bolt	For Cap Screw Diam. Screw	Broached Opening	Diam. of Head	Hexagon End Same Size as U. S. Nut For Size Bolt	Unfinished		Semi-Finished		Finished	
						Either Offset or Straight No Pin Handle	With Pin Handle and Hole	Either Offset or Straight No Pin Handle	With Pin Handle and Hole	Either Offset or Straight No Pin Handle	With Pin Handle and Hole
961A	1/8	...	2 1/8	1 1/8	3/16	.20	.30	.30	.40	.40	.50
962D	...	1/16	2 3/8	1 1/4	1/4	.22	.33	.33	.44	.44	.55
963A	1/16	...	2 1/2	1 1/2	1/16	.24	.37	.36	.49	.48	.61
963D	...	1/4	2 3/4	1 3/8	1/8	.24	.37	.36	.49	.48	.61
964A	1/4	...	2 7/8	1 1/2	3/8	.26	.39	.39	.52	.52	.65
965D	...	3/8	3 1/8	1 5/8	7/8	.29	.43	.44	.58	.58	.72
965A	1/8	...	3 1/4	1 7/8	3/8	.29	.43	.44	.58	.58	.72
966D	...	1/16	3 3/4	2	1/16	.32	.47	.48	.63	.64	.79
967A	3/8	...	4 1/8	1 1/2	1/2	.36	.53	.54	.71	.72	.89
967D	...	1/2	4 3/8	1 3/4	1/2	.36	.53	.54	.71	.72	.89
968A	1/8	...	4 1/4	1 3/4	1/2	.40	.57	.60	.77	.80	.97
968D	...	3/8	4 3/4	1 7/8	1/2	.40	.57	.60	.77	.80	.97
969A	1/2	...	4 7/8	1 3/8	7/8	.46	.64	.69	.87	.92	1.10
970A	1/8	...	5 1/8	1 1/2	7/8	.52	.72	.78	.98	1.04	1.24
970D	...	3/4	5 3/8	1 3/2	7/8	.52	.72	.78	.98	1.04	1.24
971A	5/8	...	5 7/8	1 3/8	5/8	.60	.80	.90	1.10	1.20	1.40
971D	...	7/8	6 1/8	1 3/8	5/8	.60	.80	.90	1.10	1.20	1.40
973A	3/4	1	1 3/2	1 7/8	3/4	.80	1.10	1.20	1.50	1.60	1.90
974D	...	1 1/8	1 3/2	2	7/8	.90	1.25	1.35	1.70	1.80	2.15
975A	7/8	...	1 3/2	2 1/8	7/8	1.00	1.35	1.50	1.85	2.00	2.35
975D	...	1 1/4	1 3/2	2 1/8	7/8	1.00	1.35	1.50	1.85	2.00	2.35
976A	1	...	1 3/2	2 1/4	1	1.15	1.55	1.72	2.12	2.30	2.70
977A	1 1/8	...	1 3/2	2 1/2	1 1/8	1.30	1.75	1.95	2.40	2.60	3.05
978A	1 1/4	...	2 3/2	2 3/4	1 1/8	1.60	2.05	2.40	2.85	3.20	3.65
979A	1 1/8	...	2 3/2	3	1 1/4	2.10	2.60	3.15	3.65	4.20	4.70
980A	1 1/2	...	2 3/2	3 1/8	1 1/8	2.80	3.45	4.20	4.85	5.60	6.25

Double Head Socket Wrenches

With or Without Handle

For Hexagon Nuts and Cap Screws



Fig 4510. Double Head Socket Wrench With Pin Handle

Unfinished are broached only.

Semi-Finished are broached, edges ground and case-hardened all over.

Finished are broached, polished all over, case-hardened and lacquered.

In stock with openings for U. S. Standard dimensions.

Hexagon end of shank is designed for use in combination with another wrench or with pin handle.

Unless otherwise specified, wrenches with pin handle will be sent.

Double Head Socket Wrenches

For Hexagon Nuts and Cap Screws

No.	Hexagon Openings		Broached Openings	Ex-treme Length	Diameter of Head	Diam. of Shank	Hex. Parts of Shank same size as U. S. Nut for Size Bolt	Size of Pin-Handle		Price					
										Unfinished		Semi-Finished		Finished	
	For U. S. Standard Nuts	For Cap Screws						Diam.	Leng'h	With-out Pin Handle	With Pin Handle	With-out Pin Handle	With Pin Handle	With-out Pin Handle	With Pin Handle
340A	1/8 & 1/8	1/8	21 & 21	4 7/8	1 1/8 & 1 1/8	3/8	1/4	1/8	4 1/2	.35	.46	.53	.64	.70	.81
342A	1/8 & 1/4	1/4	21 & 21	6 1/4	3/4 & 7/8	1/2	1/4	1/8	5 1/2	.45	.58	.68	.81	.90	1.03
342B	1/8 & 1/4	1/4	21 & 21	...	...	...	...	...	...	.45	.58	.68	.81	.90	1.03
342C	1/8 & 1/4	1/4	21 & 21	...	...	...	...	...	...	.45	.58	.68	.81	.90	1.03
342D	1/8 & 1/4	1/4	21 & 21	...	...	...	...	...	...	.45	.58	.68	.81	.90	1.03
342E	1/8 & 1/4	1/4	21 & 21	...	...	...	...	...	...	.45	.58	.68	.81	.90	1.03
342H	1/8 & 1/4	1/4	21 & 21	...	...	...	...	...	...	.45	.58	.68	.81	.90	1.03
342I	1/8 & 1/4	1/4	21 & 21	...	...	...	...	...	...	.45	.58	.68	.81	.90	1.03
342J	1/8 & 1/4	1/4	21 & 21	...	...	...	...	...	...	.45	.58	.68	.81	.90	1.03
342K	1/8 & 3/8	3/8	21 & 21	...	...	...	...	...	...	.45	.58	.68	.81	.90	1.03
344A	1/4 & 3/8	3/8	21 & 21	7 3/4	1 1/8 & 1 1/2	5/8	1/2	1/8	6 3/4	.65	.82	.97	1.14	1.30	1.47
344B	1/4 & 3/8	3/8	21 & 21	...	...	...	...	...	...	.65	.82	.97	1.14	1.30	1.47
344C	1/4 & 3/8	3/8	21 & 21	...	...	...	...	...	...	.65	.82	.97	1.14	1.30	1.47
344D	1/4 & 3/8	3/8	21 & 21	...	...	...	...	...	...	.65	.82	.97	1.14	1.30	1.47
344E	1/4 & 3/8	3/8	21 & 21	...	...	...	...	...	...	.65	.82	.97	1.14	1.30	1.47
344F	1/4 & 3/8	3/8	21 & 21	...	...	...	...	...	...	.65	.82	.97	1.14	1.30	1.47
344J	3/8 & 1 1/8	1 1/8	21 & 21	...	...	...	...	...	...	.65	.82	.97	1.14	1.30	1.47
344K	3/8 & 1 1/2	1 1/2	21 & 21	...	...	...	...	...	...	.65	.82	.97	1.14	1.30	1.47
344V	1/8 & 1/2	1/2	21 & 21	...	...	...	...	...	...	.65	.82	.97	1.14	1.30	1.47
344L	1/8 & 1/2	1/2	21 & 21	...	...	...	...	...	...	.65	.82	.97	1.14	1.30	1.47
344M	1/8 & 1/2	1/2	21 & 21	...	...	...	...	...	...	.65	.82	.97	1.14	1.30	1.47
344N	1/8 & 1/2	1/2	21 & 21	...	...	...	...	...	...	.65	.82	.97	1.14	1.30	1.47
344O	1/8 & 1/2	1/2	21 & 21	...	...	...	...	...	...	.65	.82	.97	1.14	1.30	1.47
346A	1/8 & 1/2	1/2	21 & 21	9 1/4	1 1/2 & 1 1/2	3/4	5/8	1/2	8 1/2	.95	1.15	1.43	1.63	1.90	2.10
346B	1/8 & 1/2	1/2	21 & 21	...	...	...	...	...	...	.95	1.15	1.43	1.63	1.90	2.10
346C	1/8 & 1/2	1/2	21 & 21	...	...	...	...	...	...	.95	1.15	1.43	1.63	1.90	2.10
346D	1/8 & 1/2	1/2	21 & 21	...	...	...	...	...	...	.95	1.15	1.43	1.63	1.90	2.10
346E	1/8 & 1/2	1/2	21 & 21	...	...	...	...	...	...	.95	1.15	1.43	1.63	1.90	2.10
346F	5/8 & 3/4	3/4	21 & 21	...	...	...	...	...	...	.95	1.15	1.43	1.63	1.90	2.10
346M	1/2 & 3/8	3/8	21 & 21	...	...	...	...	...	...	.95	1.15	1.43	1.63	1.90	2.10
346N	1/2 & 3/8	3/8	21 & 21	...	...	...	...	...	...	.95	1.15	1.43	1.63	1.90	2.10
346O	5/8 & 7/8	7/8	21 & 21	...	...	...	...	...	...	.95	1.15	1.43	1.63	1.90	2.10
346P	3/4 & 7/8	7/8	21 & 21	...	...	...	...	...	...	.95	1.15	1.43	1.63	1.90	2.10
348A	1/8 & 3/4	3/4	21 & 21	11	1 1/8 & 1 1/8	1	7/8	1 1/2	9 1/2	1.60	1.95	2.40	2.75	3.20	3.55
348B	5/8 & 3/4	3/4	21 & 21	...	...	...	...	...	...	1.60	1.95	2.40	2.75	3.20	3.55
348C	3/4 & 1	1	21 & 21	...	...	...	...	...	...	1.60	1.95	2.40	2.75	3.20	3.55
348D	7/8 & 1	1	21 & 21	...	...	...	...	...	...	1.60	1.95	2.40	2.75	3.20	3.55
348K	5/8 & 7/8	7/8	21 & 21	...	...	...	...	...	...	1.60	1.95	2.40	2.75	3.20	3.55
348L	3/4 & 7/8	7/8	21 & 21	...	...	...	...	...	...	1.60	1.95	2.40	2.75	3.20	3.55
348M	7/8 & 1 1/8	1 1/8	21 & 21	...	...	...	...	...	...	1.60	1.95	2.40	2.75	3.20	3.55
348N	1 & 1 1/8	1 1/8	21 & 21	...	...	...	...	...	...	1.60	1.95	2.40	2.75	3.20	3.55
350A	3/4 & 1	1	21 & 21	13 1/4	2 1/2 & 2 1/2	1 1/4	1 1/4	7/8	11 7/8	2.80	3.30	4.20	4.70	5.60	6.10
350B	7/8 & 1	1	21 & 21	...	...	...	...	...	...	2.80	3.30	4.20	4.70	5.60	6.10
350C	1 & 1 1/4	1 1/4	21 & 21	...	...	...	...	...	...	2.80	3.30	4.20	4.70	5.60	6.10
350D	1 1/8 & 1 1/4	1 1/4	21 & 21	...	...	...	...	...	...	2.80	3.30	4.20	4.70	5.60	6.10
350K	7/8 & 1 1/8	1 1/8	21 & 21	...	...	...	...	...	...	2.80	3.30	4.20	4.70	5.60	6.10
350L	1 & 1 1/8	1 1/8	21 & 21	...	...	...	...	...	...	2.80	3.30	4.20	4.70	5.60	6.10
350M	1 & 1 1/4	1 1/4	21 & 21	...	...	...	...	...	...	2.80	3.30	4.20	4.70	5.60	6.10
350N	1 1/8 & 1 1/4	1 1/4	21 & 21	...	...	...	...	...	...	2.80	3.30	4.20	4.70	5.60	6.10

Toledo Ratchet Boring Tool

This tool is a new "wonder worker." It readily bores holes through joists, beams and other wood members of buildings where the parallel or adjoining timbers interfere with the use of brace and bit or mallet and chisel.

It enables the operator to run pipe through cleanly bored holes, does its work very rapidly and easily, and saves all the strength of weight-carrying timbers.

One-inch and inch-and-a-half bits can be furnished on special order, at an extra price.

Complete with 2-inch and 2½-inch Bits. List Price..... 25.50
Boring Tool only (no Bits)..... 15.00

List Price of Extra Bits

2½-inch Bit.....	6.00
2-inch Bit.....	4.50
1½-inch Bit.....	3.00
1-inch Bit.....	2.20

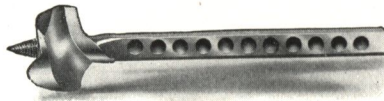
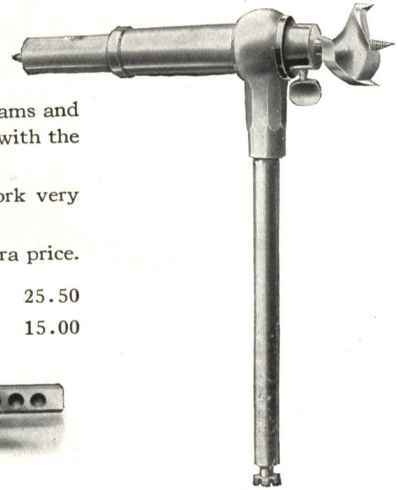


Fig. 4520



Ratchet Socket Wrench—Reversible

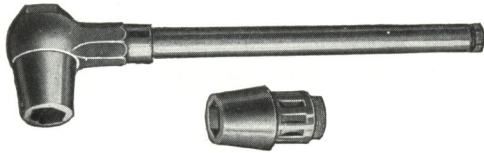


Fig. 4521. Reversible Ratchet Socket Wrench

No. 171	Wrench, 10-inch handle, with one Socket, each.....	4.75
	Additional Sockets, each.....	1.75
No. 172	Wrench, 14-inch handle, with one Socket, each.....	5.50
	Additional Sockets, each.....	2.00
No. 173	Wrench, 16-inch handle, with one Socket, each.....	6.50
	Additional Sockets, each.....	2.50
No. 174	Wrench, 18-inch handle, with one Socket, each.....	7.50
	Additional Sockets, each.....	3.00
No. 175	Wrench, 22-inch handle, with one Socket, each.....	7.75
	Additional Sockets, each.....	3.00
No. 176	Wrench, 24-inch handle, with one Socket, each.....	8.00
	Additional Sockets, each.....	3.00
No. 177	Wrench, 28-inch handle, with one Socket, each.....	8.50
	Additional Sockets, each.....	3.00

Order by bolt sizes, and state whether for Square or Hexagon Nuts.

10-inch Wrench is suitable for nuts (bolt size), ¼, ⅜, ½, ⅞, 1, 1½, 1¾, 2, 2½, 3, 3½, 4, 4½, 5, 5½, 6, 6½, 7, 7½, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
14-inch Wrench is suitable for nuts (bolt size), ¼, ⅜, ½, ⅞, 1, 1½, 1¾, 2, 2½, 3, 3½, 4, 4½, 5, 5½, 6, 6½, 7, 7½, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
16-inch Wrench is suitable for nuts (bolt size), ¼, ⅜, ½, ⅞, 1, 1½, 1¾, 2, 2½, 3, 3½, 4, 4½, 5, 5½, 6, 6½, 7, 7½, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
18 to 28-inch Wrench is suitable for nuts (bolt size), ¼, ⅜, ½, ⅞, 1, 1½, 1¾, 2, 2½, 3, 3½, 4, 4½, 5, 5½, 6, 6½, 7, 7½, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.

Bolt and Nut Sizes

Bolt, inches.....	¼	⅜	½	⅞	1	1½	1¾	2	2½	3	3½	4	4½	5	5½	6	6½	7	7½	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Square Nut, inches.....	¼	⅜	½	⅞	1	1½	1¾	2	2½	3	3½	4	4½	5	5½	6	6½	7	7½	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Hexagon Nut, inches.....	¼	⅜	½	⅞	1	1½	1¾	2	2½	3	3½	4	4½	5	5½	6	6½	7	7½	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

Ratchet Tap Wrench—Reversible

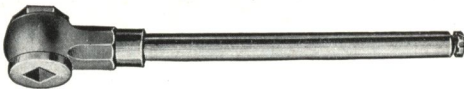


Fig. 4522. Ratchet Tap Wrench

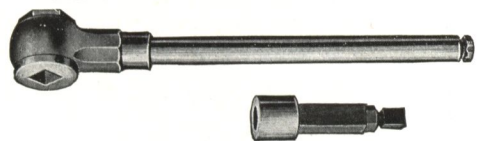


Fig. 4523. Ratchet Stud Driver

Ratchet Tap Wrench—Reversible—Fig. 4522

Wrench No.....	61	61-A	62	63	64	65	66	67
Length of Handle, inches.....	10	14	14	16	18	22	24	28
Square Hole in Socket, inches.....	5/8	3/4	7/8	1	1 1/8	1 1/4	1 1/2	1 3/4
Wrenches, each.....	4.25	5.00	5.00	5.75	6.50	6.75	7.00	7.50
Extra Sockets, each.....	1.25	1.50	1.50	1.75	2.00	2.00	2.00	2.00

Ratchet Stud Driver—Fig. 4523

No.....	161	162	163	164	165	166	167
Length of Handle, inches.....	10	14	16	18	22	24	28
Complete with One Stud Nut.....	5.75	6.75	7.75	9.00	9.25	9.50	10.00

Separate Parts

No.....	161	162	163	164	165	166	167
Stud Socket.....	1.25	1.50	1.75	2.00	2.00	2.00	2.00
Stud Nut.....	1.50	1.75	2.00	2.50	2.50	2.50	2.50

NOTE: In ordering, state size of studs for which nuts are required.

10-inch Stud Driver, suitable for Studs ¼ inch up to and including 5/8 inch.
14-inch Stud Driver, suitable for Studs 3/8 inch up to and including 7/8 inch.
16-inch Stud Driver, suitable for Studs ½ inch up to and including 1 1/8 inches.
18-inch Stud Driver, suitable for Studs 3/4 inch up to and including 1 1/4 inches.
22-inch Stud Driver, suitable for Studs 1 inch up to and including 1 3/4 inches.
24 to 28-inch Stud Drivers, suitable for Studs 1 1/8 inch up to and including 1 3/4 inches.

Favorite Reversible Ratchet Wrenches



Fig. 4530. Favorite Ratchet Wrench

Price List of Wrenches

Wrench No.	1	2	2½	3
Length of Handle, inches	15	28	28	28
Takes Heads	A B C	D E F G M	Z	H K L
Heads sent unless otherwise specified	A	E	Z	H
Price, Handle and One Head	4.50	5.50	6.50	7.50

Note: Wrench heads are interchangeable in each handle, as indicated below. A, B and C heads fit No. 1 handle, etc. The various wrench heads fit nuts (bolt sizes) as shown in table.

HEAD	To Fit U.S. Std. Nuts (Bolt Sizes) in Inches		Exact Sizes of Openings in Head		FIT HANDLES	PRICE
	Sq.	Hex.	Sq.	Hex.		
A	1/2	1/2	15/16	15/16	No. 1	\$2.50
B	5/8	5/8	1 1/8	1 1/8	No. 1	2.50
C	—	5/8 x 3/4	1 1/8 x 1 1/8	1 1/8 x 1 1/8	No. 1	2.50
D	—	3/4 x 7/8	1 5/16 x 1 1/2	1 5/16 x 1 1/2	No. 2	3.00
E	3/4	3/4	1 5/16	1 5/16	No. 2	3.00
F	7/8	7/8	1 1/2	1 1/2	No. 2	3.00
G	—	7/8 x 1	1 1/2 x 1 1/16	1 1/2 x 1 1/16	No. 2	3.00
M	—	1 x 1 1/8	1 11/16 x 1 7/8	1 11/16 x 1 7/8	No. 2	3.00
Z	—	1 1/8 x 1 1/4	1 7/8 x 2 1/16	1 7/8 x 2 1/16	No. 2½	3.00
H	1	1	1 11/16	1 11/16	No. 3	4.00
K	1 1/8	1 1/8	1 7/8	1 7/8	No. 3	4.00
L	1 1/4	1 1/4	2 1/16	2 1/16	No. 3	4.00

No. O Type of the Favorite Reversible Ratchet Wrench With Attachments

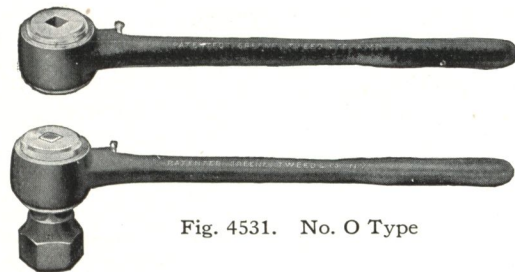


Fig. 4531. No. O Type

One 15-inch handle and one head with openings for 1/4 and 3/8-inch square Standard Nuts.

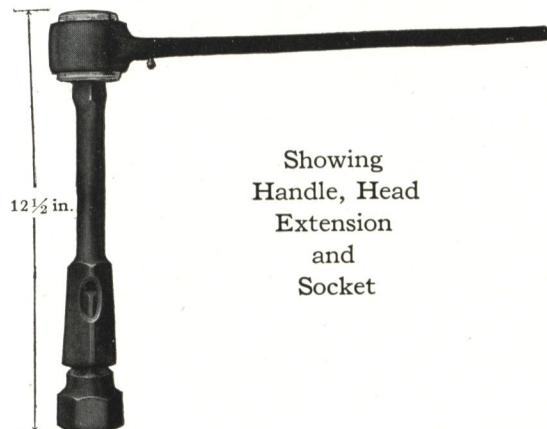
Japanned, each	4.00
Nickel-plated, each	6.00

Handle and Head With Socket

One set of sockets to fit head, consisting

of one 8-inch extension socket, ten sockets to fit standard nuts (1 each) square and hexagon, 3/8, 7/16, 1/2, 5/8 and 3/4-inch.

Price, Japanned	3.00
Price, Nickel-plated	4.00



Showing
Handle, Head
Extension
and
Socket

No. O Set

Complete on strong, well-made oak wrench board, ready to hang in engine-room.

Japanned	14.00
Nickel-plated	17.00

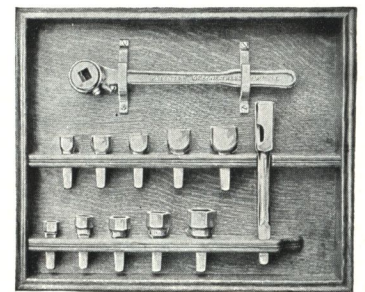


Fig. 4532. No. O Set

Ratchets and Drilling Posts

Reversible Ratchet

Consists of ratchet for taper shank twist drills; sleeve for square shank drills, and short boiler socket for square shank drills. (Sockets interchangeable.)

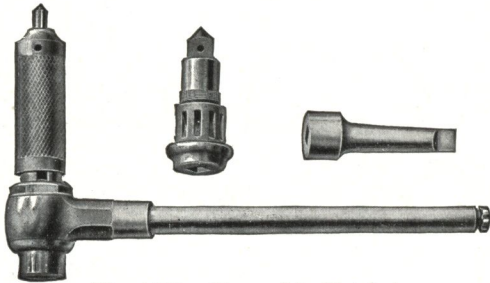


Fig. 4540. Reversible Ratchet
Combination No. 200

No. 51	Combination complete with 10-inch handle.....	7.75
No. 52	Combination complete with 14-inch handle.....	9.00
No. 53	Combination complete with 16-inch handle.....	10.00
No. 54	Combination complete with 18-inch handle.....	11.25
No. 55	Combination complete with 22 inch-handle.....	11.50
No. 56	Combination complete with 24-inch handle.....	11.75
No. 57	Combination complete with 28-inch handle.....	12.25

The Bore of Socket for 10-inch Ratchet is No. 2 Taper, taking Drills up to $\frac{29}{32}$ of an inch.

The Bore of Socket for 14 or 16-inch Ratchet is No. 3 Taper, taking Drills up to $1\frac{1}{4}$ inches.

The Bore of Socket for 18 to 28-inch Ratchets is No. 4 Taper, taking Drills up to 2 inches.

The Socket for 10-inch Ratchet takes No. 1 Morse Taper Sleeve.

The Sockets for 14 and 16-inch Ratchets take No. 2 Morse Taper Sleeve.

The Sockets for 18 to 28-inch Ratchets take No. 3 Morse Taper Sleeve.

Reversible Ratchet

Combination No. 300

A new high grade Combination Tool for light work. The taper socket is No. 1, taking all sizes of taper shank twist drills from $\frac{1}{16}$ to $\frac{19}{32}$ of an inch; also all bit stock Taper Drills and Reamers. Tool complete includes long and short feed for Morse taper. Also long and short feed for square.

For both Morse taper and bit stock taper drills. Length of handle, $8\frac{1}{2}$ inches.

Price complete..... 7.00

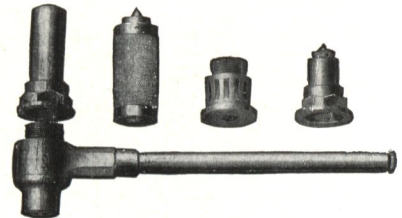


Fig. 4541. Reversible Ratchet
Combination No. 300

Reversible Boiler Ratchet—Short Feed

For Square Shank Drills Only



Fig. 4542. Reversible Boiler Ratchet

No.	31	32	33	34	35	36	37
Length Handle, inches.....	10	14	16	18	22	24	28
Height of Head, inches.....	$3\frac{5}{8}$	$4\frac{3}{8}$	$4\frac{5}{8}$	$5\frac{3}{8}$	$5\frac{3}{8}$	$5\frac{3}{8}$	$5\frac{3}{8}$
Price, each.....	5.00	5.75	6.50	7.25	7.50	7.75	8.25

No. 1 Standard Square Taper $\frac{5}{8} \times \frac{3}{8} \times 1\frac{1}{2}$ inches long on all ratchets up to and including 16 inch.

No. 2 Standard Square Taper $\frac{3}{4} \times \frac{1}{2} \times 1\frac{3}{4}$ inches long on all larger sizes.

Drilling Post or "Old Man"

For Use with Ratchet Drills

By the use of a Drilling Post many hours of labor can be saved where users of ratchet drills have to devise means or methods of bracing their ratchet for various classes of work. The Drilling Post is a necessity in almost all classes of drilling, and where time is valuable.

Foot and arm made of the best quality malleable iron, and post of solid steel.

Top and bottom of foot planed true and slotted for bolting down.

No.	0	1	2
Height of Post, inches.....	16	20	26
Radius of Arm, inches.....	8	10	12
Price.....	6.00	8.00	10.00

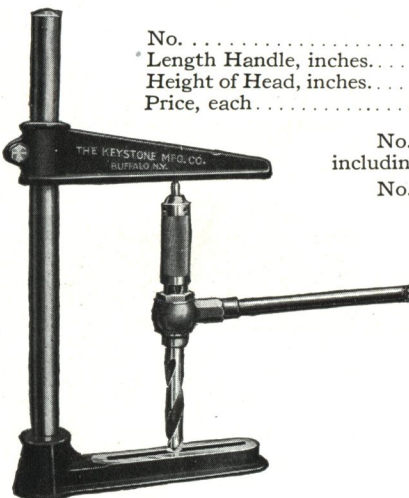


Fig. 4543. Drilling Post

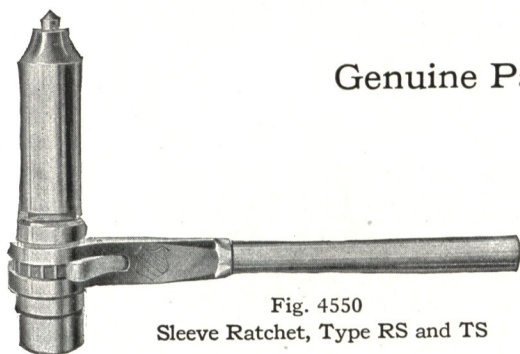


Fig. 4550

Sleeve Ratchet, Type RS and TS

Genuine Packer Ratchets—Sleeve Ratchet

Type RS—For Taper Square Shank Drills

Number	Handle, Inches	Weight, Pounds	Price, Each
1	10	6½	10.50
2	12	7½	13.50
3	16	10½	16.00
4	18	13¾	19.00
5	24	16½	23.00

Nos. 1, 2 and 3 take No. 1 Morse Taper Square Shank Drills.

Nos. 4 and 5 take No. 2 Morse Taper Square Shank Drills.

Type TS—For Taper Shank Drills

No. 2A Ratchet, taking Morse Taper Shank Drills $\frac{3}{8}$ inch to $\frac{29}{32}$ inch, inclusive, will, in combination with Morse Taper Sleeve No. 1, take taper shank drills from $\frac{1}{16}$ inch to $\frac{29}{32}$ inch, inclusive. It will also take No. 2 Ashcroft Square Socket to adapt it to taper square shank drills.

No. 3A Ratchet, taking Morse Taper Shank Drills $\frac{5}{8}$ inch to $1\frac{1}{4}$ inches, inclusive, will, in combination with Morse Taper Sleeves Nos. 1 and 2, take taper shank drills from $\frac{1}{16}$ inch to $1\frac{1}{4}$ inches, inclusive. It will also take No. 3 Ashcroft Square Socket to adapt it to taper square shank drills.

No. 4A Ratchet, taking Morse Taper Shank Drills $1\frac{1}{4}$ inches to 2 inches, inclusive, will, in combination with Morse Taper Sleeves Nos. 1, 2 and 3, take taper shank drills from $\frac{1}{16}$ inch to 2 inches, inclusive. It will also take No. 4 Ashcroft Square Socket to adapt it to taper square shank drills.

Prices—Each

Number	Handle, Inches	Weight, Pounds	Prices, Each
2A	12	6¾	16.00
3A	16	9½	20.00
4A	18	13	25.00

For prices on Ashcroft Square Socket and Morse Taper Sleeves, see Fig. 4553, 4554.

Type RR—Railroad Style—For Taper Square Shank Drills

This type of ratchet is supplied with hexagon sleeve for application of wrench and with socket for No. 2 Morse Taper Square Shank Drills. Otherwise, the tool is the same as Type RS.

Prices—Each

Number	Handle, Inches	Weight, Pounds	Prices, Each
4	18	13¾	19.00
5	24	16½	23.00



Fig. 4551. Railroad Style, Type RR

Boiler Ratchet Type RB—For Taper Square Shank Drills

These Ratchets take No. 1 Morse Taper, Square Shank

Prices—Each

Number	Handle, Inches	Weight, Pounds	Prices, Each
1	10	4½	9.00
2	12	5	10.50
3	16	7½	16.00

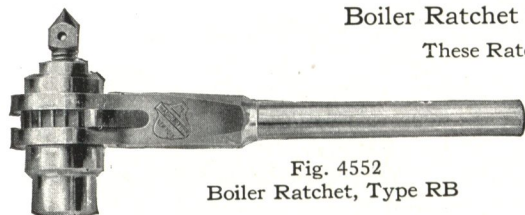


Fig. 4552

Boiler Ratchet, Type RB

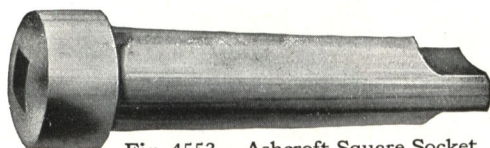


Fig. 4553. Ashcroft Square Socket

To adapt Ratchets, Type TS, to take taper square shank drills.

Prices—Each

Number	For Packer Ratchet	Prices, Each
2	2A	1.75
3	3A	1.75
4	4A	2.25

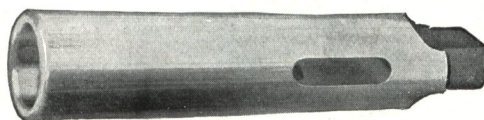


Fig. 4554. Morse Taper Sleeve

These Sleeves adapt the Genuine Packer Ratchets for smaller size taper shank drills than they are regularly designed to take.

Prices—Each

No. 1...	1.80	No. 2...	2.40	No. 3...	3.00
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Fig. 4560. Vise Closed

Pipe Vises

Armstrong Pipe Vises

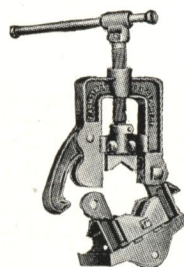


Fig. 4561. Vise Open

Armstrong Pipe Vises

No.	Junior	0	1	2	3
Pipe Size, inches	$\frac{1}{8}$ to $1\frac{1}{4}$	$\frac{1}{8}$ to $2\frac{1}{2}$	$\frac{1}{8}$ to $2\frac{1}{2}$	$\frac{1}{2}$ to $4\frac{1}{2}$	1 to 6
Weight, pounds	3	11	16	30	35
Vises, each	6.00	8.00	10.00	20.00	30.00
Upper Jaws, each	.10	.40	.50	.75	1.00
Lower Jaws, each	.20	.80	1.00	2.00	2.00
Base, each	.20	1.30	1.50	3.00	3.50
Screw, each	.15	.70	.75	1.00	1.50
Slide, each	.12	.20	.30	.60	.75



Fig. 4562. Nos. 1 and 2

Malleable Hinge or Open
Jaw Pipe Vise

Saunders Pipe Vises

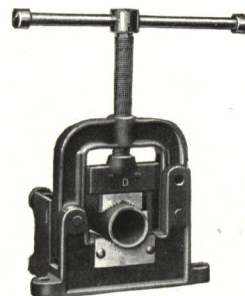
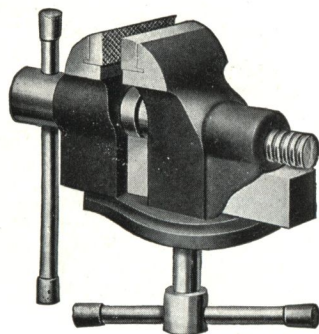


Fig. 4563. Nos. 3, 4, 5 and 6

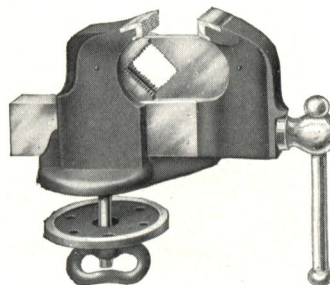
Open Jaw Pipe Vise

No.	1	2	3	4	5	6
Pipe Size, inches	$\frac{1}{8}$ to 2	$\frac{1}{4}$ to 3	$\frac{1}{2}$ to 4	2 to 6	$2\frac{1}{2}$ to 8	4 to 12
Vises, each	10.00	13.00	24.00	30.00	45.00	70.00

Note: All parts of Saunders Vises are interchangeable, and duplicates can be furnished promptly.

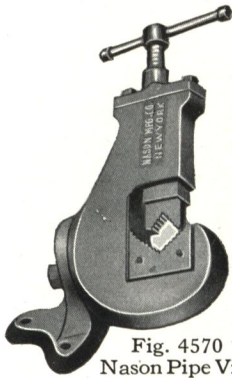
Fig. 4564. Walworth Pipe Vise
5-inch Jaw. Takes Pipe $\frac{1}{8}$ to 6-inchFig. 4565
Klingfast Pipe Vise

No.	1
Takes Pipe, inch	$\frac{1}{8}$ to 2
Each	3.00

Fig. 4566
Smith Pipe Vise

Each	18.00
Sliding Jaw, each	5.75
Small Steel Jaws, per pair	2.25
Tail Screw, each	1.30
Large Vise Screw, each	2.25
Vise Jaw Screw and Headless Screw, each	.10

No.	1	2	3
Width of Jaws, inches	$3\frac{3}{4}$	4	$4\frac{3}{4}$
Takes Pipe Sizes, inches	$\frac{1}{8}$ -2	$\frac{1}{4}$ -3	$\frac{1}{4}$ -4
List Price, each	16.00	22.00	32.00
Weight, pounds	47	70	100

Fig. 4570
Nason Pipe Vise

Pipe and Combination Vises

Nason Pipe Vise

The Nason Pipe Vise is of massive construction and especially designed for shop work of the heaviest description. The movable or working parts are so arranged as to present the greatest strength and resistance to wear, and the greatest facility for repair or renewal.

Sizes and Prices

Vise No.	1	2	3
Takes Pipe Sizes, inches.	$\frac{1}{8}$ to $1\frac{1}{4}$	$\frac{1}{4}$ to 2	$\frac{1}{4}$ to 3
Price, each.	15.00	18.00	30.00

All parts are interchangeable.

Combination Bench Pipe Vise

With Bending Forms

Has large jaw surface for holding pipe, irregular surface work or fittings; has forms for bending pipe; forming or anvil surface; jaw arrangement permits holding or cutting close work. Jaws may be instantly removed, reversed or repaired. All parts are made interchangeable.

Vise No.	0	1	3
Bending Form for Pipe up to, inches.	1	$1\frac{1}{2}$	2
Holds Pipe, inches.	$\frac{1}{8}$ - $2\frac{1}{2}$	$\frac{1}{8}$ -7	$\frac{1}{8}$ -10
Weight, pounds.	49	95	155
Width of Jaws, inches.	4	5	6
Price, each.	15.00	20.00	30.00

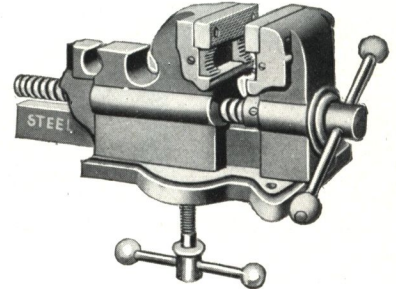
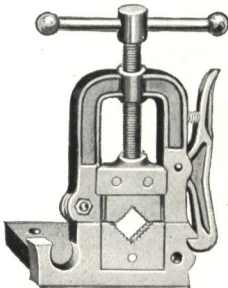


Fig. 4571. Bench Vise No. 1

Fig. 4572
Hinged Combination

Hinged Combination Malleable Iron Pipe Vise

With Bending Forms

Made strong and practical for holding pipe. Will give satisfaction for holding or bending pipe.

The two bending forms will be found a very useful feature. The forms do not in any way interfere with the pipe jaws or the strength of the vise. The form on left of vise has a flat surface on top, which will be found a frequent convenience.

Vise No.	1	2	3
Takes Pipe, inches.	$\frac{1}{8}$ - $1\frac{1}{4}$	$\frac{1}{8}$ -2	$\frac{1}{8}$ - $2\frac{1}{2}$
Weight, pounds.	6	10	18
Price, each.	8.00	9.00	10.00

Parker Vises

Combination Pipe Vise—Swivel Bottom

The steel faces are milled and are fitted to the jaws and are renewable.

No.	87	88	288 $\frac{1}{2}$	289 $\frac{1}{2}$
Weight, pounds.	47	70	119	155
Jaw, inches.	$3\frac{5}{8}$	$4\frac{1}{8}$	$4\frac{3}{4}$	$5\frac{3}{8}$
Vise Opens, inches.	$4\frac{3}{4}$	6	$6\frac{1}{2}$	$9\frac{1}{2}$
Holds, Pipe, inches.	2	3	4	6
Price, each.	16.00	22.00	32.00	45.00

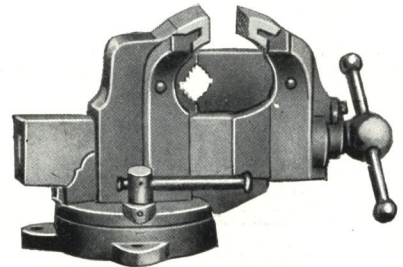
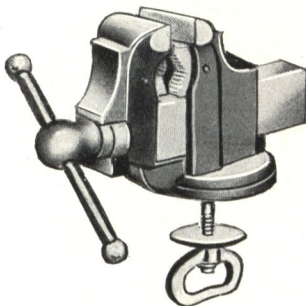


Fig. 4573. Combination Vise

Fig. 4574
Swivel Combination Vise

Series No. 7

A combination vise that is strong and compact and designed to meet the requirements for a serviceable, low priced tool.

Competitive Swivel Combination Vises

No.	7	8
Weight, pounds.	39	57
Jaw, inches.	$3\frac{5}{8}$	$4\frac{1}{8}$
Vise Opens, inches.	5	6
Holds Pipe, inches.	2	3
Price, each.	16.00	22.00

Vulcan Chain Pipe Vise

For Holding Pipe, Bolts, Bars, Shafting, Etc., From $\frac{1}{8}$ to 8 inches Diameter

These vises are unbreakable, compact, rapid in action, and positive in gripping pipe. All are equally serviceable upon and suitable for fastening to bench or post. The smaller sizes are well adapted for carrying by hand or in tool bag.

Adjustment is quickly effected by slightly turning the screw, and further quick adjustment is gained by engaging the projecting rivets of chain with a series of bosses on base.

They are made entirely of wrought steel; the drop-forged jaws are of saw-tempered steel for file sharpening. The hand-made chains are of same quality as those of our "Vulcan" Chain Pipe Wrenches; all parts are fully guaranteed and replacements carried in stock.

The jaws of size No. 1 are designed to prevent the bending of weaker and smaller sizes of pipe should an excess of chain pressure be placed upon them.

Orders for chains take screw also, unless otherwise specified.

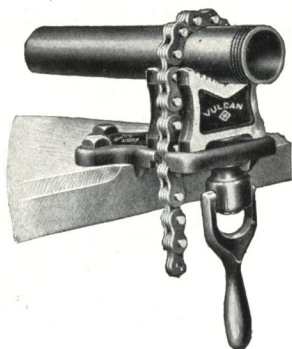


Fig. 4580
Vulcan Chain Pipe Vise

Prices—Vises and Extra Parts

No.	1	2	4
Vise, complete.....	3.50	7.50	18.00
For Pipe Sizes, inches.....	$\frac{1}{8}$ to 2	$\frac{1}{4}$ to 4	$\frac{3}{4}$ to 8
Jaws, pair.....	1.50	3.50	9.00
Chain with Screw.....	1.25	2.40	6.00
Screw.....	.40	.70	1.25
Handle and Nut.....	1.10	2.10	3.50
Nut.....	.70	1.35	2.00
Weight, pounds.....	4	10	30

Vulcan Pipe Vise Clamps

Drop-forged from a strong, tough grade of carefully selected steel, provided with wrought steel Screw and Swivel and submitted to a special refining process or heat treatment which further increases its stiffness and strength, this Clamp eminently completes the extreme usefulness of the No. 1 "Vulcan" Chain Pipe Vise.

Applicable for fastening to sill, table, bench or chair, etc., it is a valuable clamping device under conditions where other methods are impractical.

No. 1—For No. 1 "Vulcan" Vise. Length $5\frac{1}{8}$ inches. Width $4\frac{3}{4}$ inches. Size screw $\frac{1}{2} \times 3\frac{5}{8}$ inches.

Price

Clamp, complete.....	1.75
Extra Screw and Swivel, not assembled.....	.50

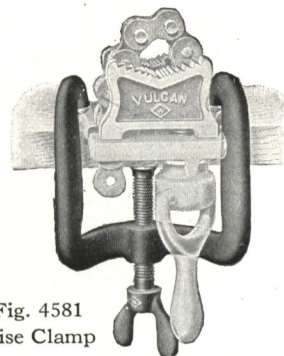


Fig. 4581
Vise Clamp

Vulcan Pipe Vise Mount

This serviceable combination of superior drop-forgings (drilled and threaded) and standard pipe for legs, provides for an obviously great need.

Sure in performance of its requirements, firm and portable, it is particularly commended to all in the "pipe working" field.

For sale with or without legs for use in combination with Nos. 1 and 2 "Vulcan" Chain Pipe Vises.

No.	1	2
For Vulcan Vise No.....	1	2
Arms, Bolts and Nuts only.....	1.50	2.00
Complete with Pipe Legs.....	3.00	4.00
Weight, complete, pounds.....	11	15

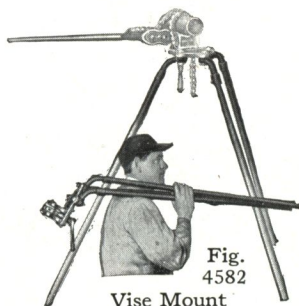


Fig. 4582
Vise Mount

Portable Bench Vise

Made of best soft steel in three sizes as listed. Can be set up quickly and without tools of any kind. It is only necessary to put a piece of pipe on top of the feed screw against a beam or ceiling and give the feed screw a few turns, and the bench is ready for use.

The bench folds easily and occupies but a small space when not in use.

Construction is strong, and there is nothing on it to break or get out of order.

A new and very important feature is the pipe bending appliance on back of bench.

Portable Bench Vise No.....	1	2	3
Size, inches.....	$1\frac{1}{2} \times 3\frac{3}{8}$	$1\frac{1}{2} \times \frac{1}{2}$	$1\frac{3}{4} \times \frac{1}{2}$
Each.....	10.00	12.50	15.00

Prices do not include vise.

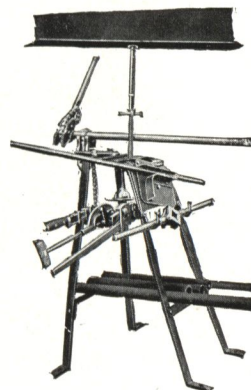


Fig. 4583. Portable Vise Bench

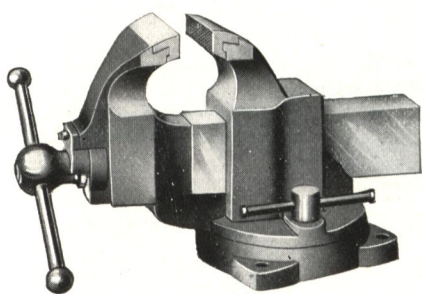


Fig. 4590. Swivel Base

Pipe and Bench Vises

Parker Vises Eclipse Series

Steel faces are milled and fitted to the jaws

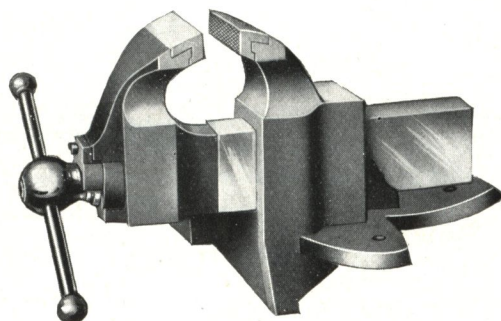


Fig. 4591. Stationary Base

Parker Vises—Swivel Base Fig. 4590

No.	200-2	201-2½	202-3	203-3½	204-4	205-4½	206-5	207-6
Width Jaw, inches	2	2½	3	3½	4	4½	5	6
Vise opens, inches	3	3¼	4	5	6	6½	7½	10
Weight, pounds	12	18	27	42	58	76	104	158
Price, each	5.75	6.50	7.50	8.75	10.50	12.50	16.00	30.00

Parker Vises—Stationary Base, Fig. 4591

No.	100-2	101-2½	102-3	103-3½	104-4	105-4½	106-5	107-6
Width Jaws, inches	2	2½	3	3½	4	4½	5	6
Vise opens, inches	3	3¼	4	5	6	6½	7½	10
Weight, pounds	9	12	23	35	43	61	82	133
Price, each	4.75	5.25	6.00	7.00	8.50	10.00	13.00	25.00

Swivel Vises—Semi-Steel—Cast-Steel Anvil

The steel faces are milled and fitted to the jaws and are renewable

Sizes and Prices

No.	19	20	21	22
Weight, pounds	8	8½	23	25
Jaws, inches	2	2¼	3⅛	3⅝
Vise opens, inches	2¼	2¼	4	4¼
Price, each	4.00	5.00	7.00	8.75

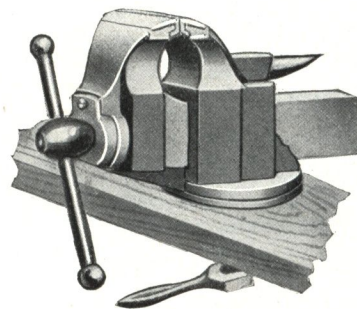


Fig. 4592. Anvil Vise

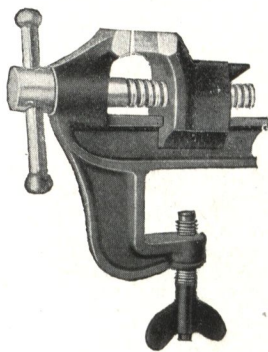


Fig. 4593
Bonney Standard

Bonney Standard Vises

Made of the highest grade gray iron with malleable iron main and thumb screws. All screws are machine threaded, not cast.

The vises are of very heavy design and will give good service for light work.

Sizes and Prices

No.	Description	Size Jaw Inches	Weight, Each Pounds	Per Dozen
00	Iron Jaws	1	1	3.25
01	Iron Jaws	1½	1½	3.75
02	Iron Jaws	2	2¼	6.50
02½	Iron Jaws	2½	4	12.00

Trident Drill Press Combination and Multi-Vise

A powerful Drill Press that will drill holes up to inch in diameter in metal.

A powerful Vise, quick-acting jaws, 3½ inches wide, steel faced, about 8 inches opening.

A heavy Anvil and steel cutting Hardy.

A Pipe Vise with detachable jaw.

Vise holds work that is being drilled.

All mounted on a swivel base.

Anvil surface, 6½ x 3½ x 5 inches high; weight about 70 lbs.

List Price, each..... 25.00

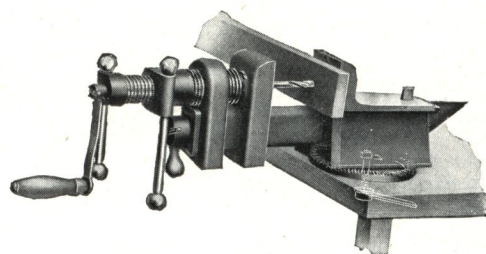


Fig. 4594. Trident Combination

Dudgeon Roller Tube Expanders

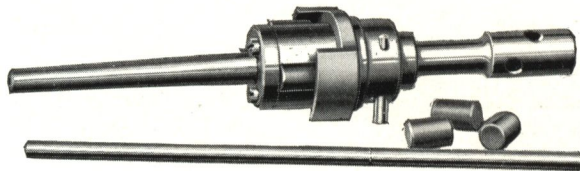


Fig. 4600. Roller Tube Expander

Dudgeon Roller Tube Expander For One Size Tube Only

Size Tube.....	1	1 1/4	1 1/2	1 3/4	1 7/8	2	2 1/4	2 1/2	2 3/4
Each.....	10.00	12.00	13.00	15.00	17.00	20.00	25.00	29.00	34.00
Size Tube.....	3	3 1/4	3 1/2	4	4 1/2	5	6	7	
Each.....	39.00	44.00	48.00	58.00	60.00	75.00	90.00	110.00	

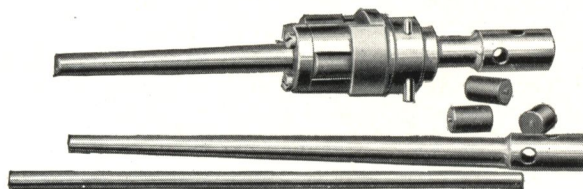


Fig. 4601. Compound Expander

Dudgeon Compound Roller Tube Expander

Will expand two sizes up to 2-inch and three sizes above, as listed

Tubes	Each	Tubes	Each
1 5/8 and 1 3/4 inches.....	20.00	3 1/2, 3 5/8 and 3 3/4 inches.....	65.00
1 3/4 and 1 7/8 inches.....	22.00	3 3/4, 3 7/8 and 4 inches.....	70.00
1 7/8 and 2 inches.....	25.00	4, 4 1/8 and 4 1/4 inches.....	75.00
2, 2 1/8 and 2 1/4 inches.....	30.00	4 1/4, 4 3/8 and 4 1/2 inches.....	80.00
2 1/4, 2 3/8 and 2 1/2 inches.....	35.00	4 1/2, 4 5/8 and 4 3/4 inches.....	85.00
2 1/2, 2 5/8 and 2 3/4 inches.....	40.00	4 3/4, 4 7/8 and 5 inches.....	90.00
2 3/4, 2 7/8 and 3 inches.....	45.00	5, 5 1/4 and 5 1/2 inches.....	100.00
3, 3 1/8 and 3 1/4 inches.....	52.00	5 1/2, 5 3/4 and 6 inches.....	110.00
3 1/4, 3 3/8 and 3 1/2 inches.....	60.00	6, 6 1/4 and 6 1/2 inches.....	120.00

In ordering, give outside diameter and largest tube to be expanded.

Dudgeon Special Roller Tube Expander For Water Tube Boilers

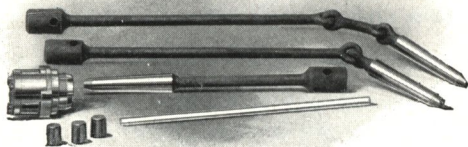


Fig. 4602. Expander Complete

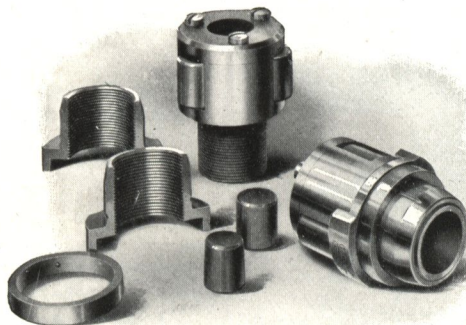


Fig. 4603. Showing Expander with and without Guide Ring

Dudgeon Roller Tube Expander for Water Tube Boilers

This expander is intended for expanding the tubes in water tube boilers with four-inch tubes. Fig. 4602 shows the entire outfit, which consists of an adjustable guide-ring expander, with one set of straight rollers and an extra set of taper rollers 1 1/2 inches long, and one each straight, single-jointed and double-jointed mandrel and mandrel turning pin. This expander is adjustable to suit different lengths of tubes by means of a split collar, with internal grooves, which engage corresponding grooves cut on the shank of the expander body. This split guide-ring is held in position on the grooves by means of a collar, the removal of which allows the shifting of the guide-ring to any position desired. The larger cut shows an expander with the guide-ring removed; also an expander with the guide-ring in position. The expander is packed in a strong wooden box measuring 33 inches long, 8 inches wide and 5 inches deep; gross weight, 42 pounds; net weight, 36 pounds. Price, each..... 40.00

Tube Expanders

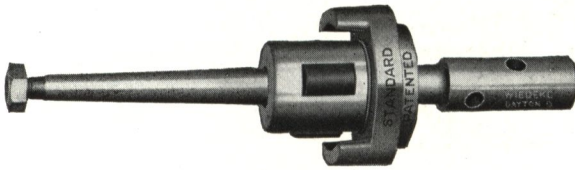


Fig. 4610. Standard Expander

Standard Roller Expander

The rolls and mandrel of this expander are made of good tool steel and tempered. The frame is one piece, always furnishing a good bearing to the guard. It has no collar or pin to get loose or lost, throwing tool out of commission. This expander will give good ordinary service.

Size of Expander for Outside Diameter Tubes, inches....	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	1 $\frac{3}{4}$	1 $\frac{7}{8}$	2	2 $\frac{1}{4}$	2 $\frac{1}{2}$	2 $\frac{3}{4}$
Will Enter and Expand Tubes I. D. from, inches.....	$\frac{3}{8}$ to 1	1 $\frac{1}{8}$ to 1 $\frac{1}{4}$	1 $\frac{3}{8}$ to 1 $\frac{1}{2}$	1 $\frac{1}{2}$ to 1 $\frac{3}{4}$	1 $\frac{5}{8}$ to 1 $\frac{7}{8}$	1 $\frac{3}{4}$ to 2	1 $\frac{7}{8}$ to 2 $\frac{1}{4}$	2 $\frac{1}{2}$ to 2 $\frac{1}{2}$	2 $\frac{3}{4}$ to 2 $\frac{3}{4}$
Price, complete.....	10.00	10.00	10.00	10.00	10.00	10.00	12.00	14.00	16.00
Approx. Weight Boxed, lbs....	2 $\frac{1}{2}$	2 $\frac{3}{4}$	3	4 $\frac{1}{4}$	4 $\frac{1}{2}$	5	6	7 $\frac{1}{2}$	8 $\frac{1}{2}$
Size of Expander for Outside Diameter Tubes, inches....	3	3 $\frac{1}{4}$	3 $\frac{1}{2}$	3 $\frac{3}{4}$	4	4 $\frac{1}{4}$	4 $\frac{1}{2}$	5	6
Will Enter and Expand Tubes I. D. from, inches.....	2 $\frac{5}{8}$ to 3	2 $\frac{7}{8}$ to 3 $\frac{1}{4}$	3 $\frac{1}{8}$ to 3 $\frac{1}{2}$	3 $\frac{3}{8}$ to 3 $\frac{3}{4}$	3 $\frac{5}{8}$ to 4	3 $\frac{3}{4}$ to 4 $\frac{1}{4}$	4 $\frac{1}{8}$ to 4 $\frac{1}{2}$	4 $\frac{1}{2}$ to 5	5 $\frac{3}{8}$ to 6
Price, complete.....	18.00	20.00	23.00	25.00	30.00	40.00	50.00	60.00	70.00
Approx. Weight Boxed, lbs....	10 $\frac{1}{2}$	14	17	17 $\frac{1}{2}$	20 $\frac{1}{2}$	24 $\frac{1}{2}$	25	34 $\frac{1}{2}$	49 $\frac{1}{2}$

Dayton Roller Expander

The rolls and mandrel of this expander are made of the very best tool steel and tempered. The collar and frame is one piece and hardened, making it the most economical expander of this class upon the market, having the fewest parts.

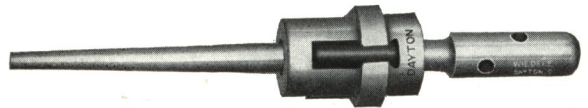


Fig. 4612. Dayton Expander

Size of Expander for Outside Diameter Tubes, inches....	1	1 $\frac{1}{8}$	1 $\frac{1}{4}$	1 $\frac{3}{8}$	1 $\frac{1}{2}$	1 $\frac{5}{8}$	1 $\frac{3}{4}$	1 $\frac{7}{8}$	2
Will Enter and Expand Tubes I. D. from, inches.....	$\frac{3}{8}$ to 1	$\frac{1}{2}$ to 1 $\frac{1}{8}$	1 $\frac{1}{8}$ to 1 $\frac{1}{4}$	1 $\frac{1}{4}$ to 1 $\frac{3}{8}$	1 $\frac{3}{8}$ to 1 $\frac{1}{2}$	1 $\frac{5}{8}$ to 1 $\frac{5}{8}$	1 $\frac{1}{2}$ to 1 $\frac{3}{4}$	1 $\frac{3}{4}$ to 1 $\frac{7}{8}$	1 $\frac{3}{4}$ to 2
Price, complete.....	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00
Approx. Weight Boxed, lbs....	3	3	3 $\frac{1}{2}$	3 $\frac{1}{2}$	4	5	5 $\frac{1}{2}$	5 $\frac{1}{2}$	6
Size of Expander for Outside Diameter Tubes, inches....	2 $\frac{1}{8}$	2 $\frac{1}{4}$	2 $\frac{3}{8}$	2 $\frac{1}{2}$	2 $\frac{3}{4}$	3	3 $\frac{1}{4}$	3 $\frac{1}{2}$	4
Will Enter and Expand Tubes I. D. from, inches.....	1 $\frac{1}{8}$ to 2 $\frac{1}{8}$	1 $\frac{1}{4}$ to 2 $\frac{1}{4}$	2 $\frac{1}{8}$ to 2 $\frac{3}{8}$	2 $\frac{1}{2}$ to 2 $\frac{1}{2}$	2 $\frac{3}{4}$ to 2 $\frac{3}{4}$	2 $\frac{5}{8}$ to 3	2 $\frac{7}{8}$ to 3 $\frac{1}{4}$	3 $\frac{1}{8}$ to 3 $\frac{1}{2}$	3 $\frac{3}{8}$ to 4
Price, complete.....	13.00	13.00	15.00	15.00	17.00	17.00	18.00	20.00	22.00
Approx. Weight Boxed, lbs....	6 $\frac{1}{2}$	6 $\frac{1}{2}$	7	7 $\frac{1}{2}$	8 $\frac{1}{2}$	13	13 $\frac{1}{2}$	16	23

Ideal All Steel Expander

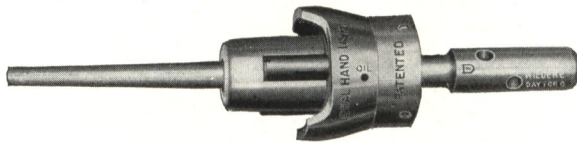


Fig. 4613. Ideal Expander

The rolls, detachable mandrel, frame and guard of this expander are made of the very best tool steel and tempered. Rolls cannot fall to inside or outside of frame when mandrel is removed; rolls are double length and reversible. Guaranteed to be strictly the highest grade and is for hand use only. Will do for any thickness tube sheet.

Size of Expander for Outside Diameter Tubes, inches....	1 $\frac{1}{2}$	1 $\frac{5}{8}$	1 $\frac{3}{4}$	1 $\frac{7}{8}$	2	2 $\frac{1}{8}$	2 $\frac{1}{4}$	2 $\frac{3}{8}$	2 $\frac{1}{2}$
Will Enter and Expand Tubes I. D. from, inches.....	1 $\frac{3}{8}$ to 1 $\frac{1}{2}$	1 $\frac{5}{8}$ to 1 $\frac{5}{8}$	1 $\frac{1}{2}$ to 1 $\frac{3}{4}$	1 $\frac{5}{8}$ to 1 $\frac{7}{8}$	1 $\frac{3}{4}$ to 2	1 $\frac{1}{2}$ to 2 $\frac{1}{8}$	1 $\frac{1}{8}$ to 2 $\frac{1}{4}$	2 $\frac{1}{8}$ to 2 $\frac{3}{8}$	2 $\frac{1}{2}$ to 2 $\frac{1}{2}$
Price, complete.....	16.00	16.00	16.00	16.00	16.00	18.00	18.00	19.50	19.50
Approx. Weight Boxed, lbs....	4 $\frac{1}{2}$	6 $\frac{1}{2}$	7	7 $\frac{1}{2}$	8	8 $\frac{1}{2}$	9	10 $\frac{1}{2}$	11
Size of Expander for Outside Diameter Tubes, inches....	2 $\frac{5}{8}$	2 $\frac{3}{4}$	3	3 $\frac{1}{4}$	3 $\frac{1}{2}$	3 $\frac{3}{4}$	4	4 $\frac{1}{4}$	4 $\frac{1}{2}$
Will Enter and Expand Tubes I. D. from, inches.....	2 $\frac{3}{8}$ to 2 $\frac{5}{8}$	2 $\frac{1}{2}$ to 2 $\frac{3}{4}$	2 $\frac{5}{8}$ to 3	2 $\frac{7}{8}$ to 3 $\frac{1}{4}$	3 $\frac{1}{8}$ to 3 $\frac{1}{2}$	3 $\frac{3}{8}$ to 3 $\frac{3}{4}$	3 $\frac{1}{4}$ to 4	3 $\frac{1}{2}$ to 4 $\frac{1}{4}$	4 $\frac{1}{8}$ to 4 $\frac{1}{2}$
Price, complete.....	22.00	22.00	22.00	24.50	24.50	27.00	27.00	40.00	50.00
Approx. Weight Boxed, lbs....	13 $\frac{1}{2}$	14 $\frac{1}{2}$	17	18 $\frac{1}{2}$	21	23	28	31	32

Tube Expanders

Ideal All Steel Self-Feed Expander

The rolls, detachable mandrel, frame and guard of this expander are made of the very best tool steel and tempered. Rolls cannot fall to inside or outside of frame when mandrel is removed; rolls are double length and reversible. Furnished with frictionless phosphor bronze bearing, impossible to get out of order, reducing friction to a minimum. Expander is self-feeding and for power use. Can also be used by hand.

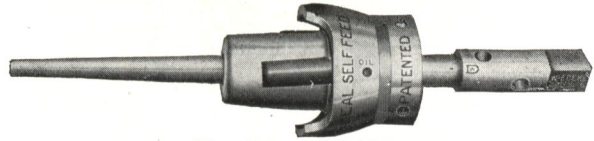


Fig. 4620. Self-Feed Expander

All expanders have a right hand feed and furnished with standard, detachable combination square shank mandrels.

Sizes 1-inch to 1½-inch, inclusive, ½-inch square. Sizes 1⅝-inch to 2¾-inch, inclusive, ¾-inch square. Sizes 3-inch to 6-inch, inclusive 1-inch square.

Guaranteed to be strictly the highest grade. Will do for any thickness tube sheet.

Size of Expander for Outside Diameter Tubes, inches....	1	1⅝	1¾	1⅝	1½	1⅝	1¾	1⅝	2
Will Enter and Expand Tubes I. D. from, inches.....	⅞ to 1	1⅜ to 1⅝	1⅞ to 1¾	1⅞ to 1⅝	1⅞ to 1½	1⅞ to 1⅝	1⅞ to 1¾	1⅞ to 1⅝	1⅞ to 2
Price, complete.....	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
Approx. Weight Boxed, lbs....	3½	4	4	4½	4½	6½	7	7½	8
Size of Expander for Outside Diameter Tubes, inches....	2½	2¼	2⅝	2½	2⅝	2¾	3	3¼	3½
Will Enter and Expand Tubes I. D. from, inches.....	1⅞ to 2½	1⅞ to 2¼	2⅞ to 2⅝	2⅞ to 2½	2⅞ to 2⅝	2⅞ to 2¾	2⅞ to 3	2⅞ to 3¼	3⅞ to 3½
Price, complete.....	18.00	18.00	19.50	19.50	22.00	22.00	22.00	24.50	24.50
Approx. Weight Boxed, lbs....	8½	9	10½	11	13½	14½	17	18½	21
Size of Expander for Outside Diameter Tubes, inches....	3¾	4	4¼	4½	4¾	5	5¼	5½	6
Will Enter and Expand Tubes I. D. from, inches.....	3⅞ to 3¾	3⅞ to 4	3⅞ to 4¼	4⅞ to 4½	4⅞ to 4¾	4⅞ to 5	4⅞ to 5¼	4⅞ to 5½	5⅞ to 6
Price, complete.....	27.00	27.00	40.00	50.00	55.00	55.00	60.00	60.00	65.00
Approx. Weight Boxed, lbs....	23	28	31	32	35	39½	40½	51	55

Standard Sectional Expander

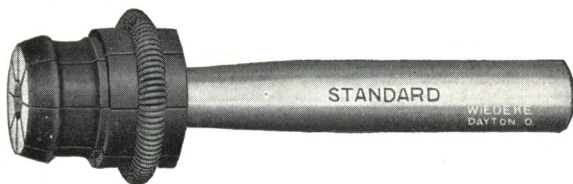


Fig. 4621. Standard Sectional Expander

This expander is made completely of steel and hardened. It is for hand use only. Used mostly on fire boxes of thresher engines and for repair work and gives good ordinary service. When ordering always state thickness of tube sheet; ⅜-inch plate for ⅜-inch thickness tube sheet and ½-inch plate for ½-inch thickness tube sheet carried in stock. All other plates are special.

Size of Expander for Outside Diam. Tubes, ins...	1	1¼	1½	1¾	2	2¼	2½	2¾	3	3¼	3½	4
Will Enter and Expand Tubes I. D., inches....	⅞	1⅜	1⅞	1⅞	1⅞	1⅞	1⅞	2⅞	2⅞	2⅞	3⅞	3⅞
Price, complete.....	12.00	12.00	12.00	12.00	12.00	13.00	15.00	18.00	22.00	26.00	30.00	33.00
Approximate Weight Boxed, pounds.....	3	3½	4	4½	5	5½	7	8½	9½	13½	14	16

Ideal Sectional Expander

This form B Sectional Expander is made entirely of the very best tool steel and tempered; is for hand and power use. Guaranteed to be strictly the highest grade. Expanders assume a true circle after expanded in full in the tube. All sections are interchangeable. Made with double taper to relieve rear of sections and releasing pin bringing actual working surface together only. Carried in stock ½-inch, ⅙-inch and ⅝-inch plate. Plate is the dimension from the bottom to the bottom of the recess.

Mention what plate is desired when ordering.

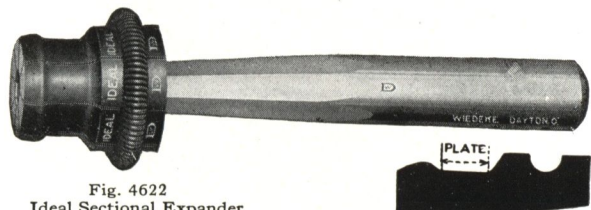


Fig. 4622
Ideal Sectional Expander

Size of Expander for Outside Diam. Tubes, ins...	1½	1⅝	1¾	1⅝	2	2¼	2½	2¾	3	3¼	4
Will Enter and Expand Tubes I. D., inches....	1⅞	1⅞	1⅞	1⅞	1⅞	1⅞	1⅞	2⅞	2⅞	2⅞	3⅞
Price, complete.....	12.00	12.00	12.00	12.00	12.00	13.00	13.00	15.00	15.00	22.00	33.00
Approximate Weight Boxed, pounds.....	4	4	4½	4½	5	5	5½	7	7	9½	16½

Tube Cutters and Stoppers

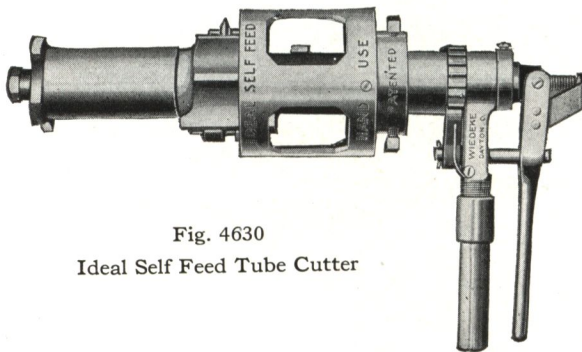


Fig. 4630
Ideal Self Feed Tube Cutter

Ideal Self Feed Tube Cutter

This cutter has solved the problem of cutting off steel tubes without cracking them. It cuts off new tubes with a bevel ready for beading, partly tightening the tube at the same time. By moving the guard back, which requires but a few moments, old tubes can be cut off on the inside of the boiler head.

Tube Cutter Extension, Fig. 4631

With extension of proper length connected to Ideal Cutter, the operator can stand upright outside of a smoke box or vertical submerged tubular boiler, making the work easier and more rapid.

Ideal Self Feed Tube Cutter

O. D. Tubes, inches.	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	4	4 1/2	5	5 1/2	6
I. D. Tubes, inches.	1 23/32	1 11/16	2 5/32	2 13/32	2 5/8	2 7/8	3 1/8	3 5/8	4 1/16	4 1/2	4 11/16	5 3/8
Approximate Weight, lbs..	18	19	19 1/2	20	29	29 1/2	31 1/2	33	50 1/2	54	55	55 1/2
Each.	15.00	16.00	17.00	18.00	22.00	22.50	23.00	24.00	37.00	39.00	39.50	40.00

Ideal Tube Cutter Extension



Fig. 4631. Tube Cutter Extension

Size No.	D-1 1/2	D-3	D-6	D-8	E-1 1/2	E-3	E-6	E-8	F-1 1/2	F-3
Price Complete.	4.00	8.50	14.00	16.00	5.00	11.00	16.00	20.00	9.00	20.00
Approximate Weight, pounds..	8 1/2	25	37	49	12	31	41	55	25	35
Fits Cutters.	2, 2 1/4, 2 1/2, 2 3/4				3, 3 1/4, 3 1/2, 4				4 1/2, 5, 5 1/2, 6	

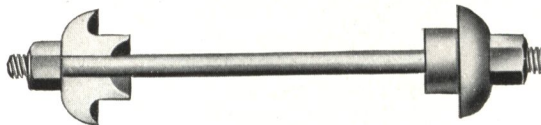


Fig. 4632. Tube Rods With Caps

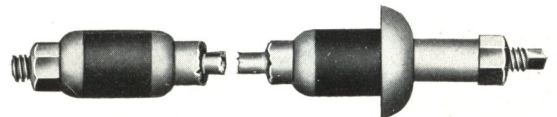


Fig. 4633. Emergency Tube Stopper
With Expanding Asbestos Plugs

Tube Rods With Caps, Fig. 4632

Sizes of Tubes Inches	Diameter of Rods Inches	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.	9 Ft.	10 Ft.	11 Ft.	12 Ft.	13 Ft.	14 Ft.	15 Ft.	2 Extra Caps
2	3/4	1.30	1.39	1.48	1.57	1.66	1.75	1.84	1.93	2.02	2.11	2.20	2.29	2.38	.40
2 1/4	3/4	1.40	1.49	1.58	1.67	1.76	1.85	1.94	2.03	2.12	2.21	2.30	2.39	2.48	.50
2 1/2	3/4	1.50	1.59	1.68	1.77	1.86	1.95	2.04	2.13	2.22	2.31	2.40	2.49	2.58	.60
2 3/4	7/8	1.75	1.87	1.99	2.11	2.23	2.35	2.47	2.59	2.71	2.83	2.95	3.07	3.19	.70
3	7/8	1.85	1.97	2.09	2.21	2.33	2.45	2.57	2.69	2.81	2.93	3.05	3.17	3.29	.80
3 1/4	7/8	1.95	2.07	2.19	2.31	2.43	2.55	2.67	2.79	2.91	3.03	3.15	3.27	3.39	.90
3 1/2	1	2.30	2.46	2.62	2.78	2.94	3.10	3.26	3.42	3.58	3.74	3.90	4.06	4.22	1.00
3 3/4	1	2.40	2.56	2.72	2.88	3.04	3.20	3.36	3.52	3.68	3.84	4.00	4.16	4.32	1.10
4	1	2.50	2.66	2.82	2.98	3.14	3.30	3.46	3.62	3.78	3.94	4.10	4.26	4.42	1.20

Emergency Tube Stopper, Fig. 4633

Sizes of Tubes Inches	Diameter of Rods Inches	3 Ft.	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.	9 Ft.	10 Ft.	11 Ft.	12 Ft.	13 Ft.	14 Ft.	15 Ft.	2 Extra Plugs
2	5/8	3.15	3.30	3.45	3.60	3.75	3.90	4.05	4.20	4.35	4.50	4.65	4.80	4.95	.90
2 1/4	3/4	3.45	3.60	3.75	3.90	4.05	4.20	4.35	4.50	4.65	4.80	4.95	5.10	5.25	1.20
2 1/2	3/4	3.80	3.95	4.10	4.25	4.40	4.55	4.70	4.85	5.00	5.15	5.30	5.45	5.60	1.55
2 3/4	7/8	4.35	4.55	4.75	4.95	5.15	5.35	5.55	5.75	5.95	6.15	6.35	6.55	6.75	1.95
3	7/8	4.95	5.15	5.35	5.55	5.75	5.95	6.15	6.35	6.55	6.75	6.95	7.15	7.35	2.40
3 1/4	7/8	5.60	5.80	6.00	6.20	6.40	6.60	6.80	7.00	7.20	7.40	7.60	7.80	8.00	2.90
3 1/2	1	6.65	6.90	7.15	7.40	7.65	7.90	8.15	8.40	8.65	8.90	9.15	9.40	9.65	3.45
3 3/4	1	7.30	7.55	7.80	8.05	8.30	8.55	8.80	9.05	9.30	9.55	9.80	10.05	10.30	4.05
4	1	8.00	8.25	8.50	8.75	9.00	9.25	9.50	9.75	10.00	10.25	10.50	10.75	11.00	4.70

Boiler Tube Cleaners



Fig. 4640. Elliptic Cleaner

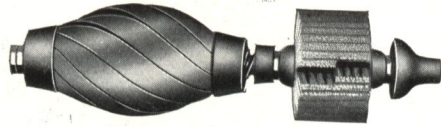


Fig. 4641. Elliptic Cleaner with Brush

Elliptic Tube Cleaners

Tube Size.....	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4	4
Price, each.....	2.00	2.00	2.00	2.00	2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00

Note: The Elliptic pattern can be expanded and contracted.

Ingalls' Self-Adjusting Tube Scrapers



Fig. 4642. Ingalls' Scraper

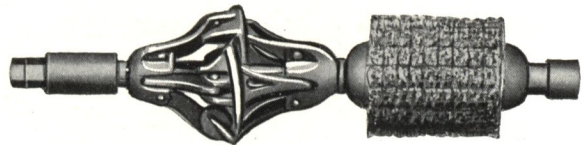


Fig. 4643. Combination Scraper and Brush

Ingalls' Scraper

Tube Size.....	1 1/2	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4	4	4 1/2
Price, each.....	2.00	2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.50

Combination Scraper and Wire Brush

Tube Size.....	1 1/2	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4	4	4 1/2
Price, each.....	2.50	2.50	2.80	3.10	3.45	3.75	4.05	4.40	4.65	5.00	5.65

Duplex and Engineers' Favorite Flue Scrapers



Fig. 4644. Duplex Scraper

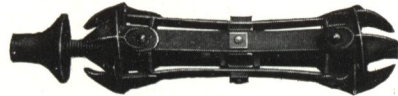


Fig. 4645. Engineers' Favorite

Duplex and Engineers' Favorite Scrapers

Tube Size.....	*1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4	4	4 1/2	5	6
Price, each.....	2.00	2.00	2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	5.00	6.25	7.50

*Engineers' Favorite is not made in 1 1/2-inch size.

The Criss-Cross Tube Cleaner

In ordering Criss-Cross Cleaners give inside and outside diameter of tubes



Fig. 4646. Criss-Cross Cleaner

Sizes and List Prices

O. D. Tube.....	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3
Each.....	2.00	2.00	2.00	2.00	2.25	2.60	2.75	3.00
O. D. Tube.....	3 1/4	3 1/2	3 3/4	4	4 1/2	5	6	
Each.....	3.25	3.50	3.75	4.00	4.50	5.00	6.00	

National Steel Tube Cleaner

Can Be Adjusted to Fit Tube

Size.....	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3
Each.....	2.00	2.00	2.00	2.25	2.50	2.75	3.00
Size.....	3 1/4	3 1/2	4	4 1/2	5	5 1/2	6
Each.....	3.25	3.50	4.00	4.50	5.00	5.50	7.50

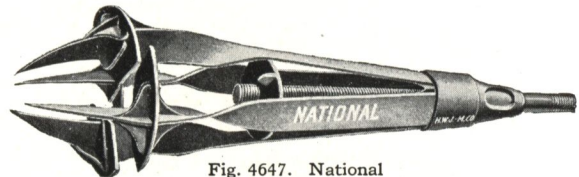


Fig. 4647. National

Pilley's Combination Flue Brush and Scraper

By simply turning the rod or handle the ends contract until it will readily pass into the flue. By turning handle in opposite direction the cleaner is gradually expanded until it fits the tube perfectly; the brush following leaves the tube absolutely clean.

Size.....	2	2¼	2½	2¾	3	3¼
Each.....	2.00	2.25	2.50	2.75	3.00	3.25
Size.....		3½	4	4½	5	6
Each.....		3.50	4.00	4.50	5.00	6.00

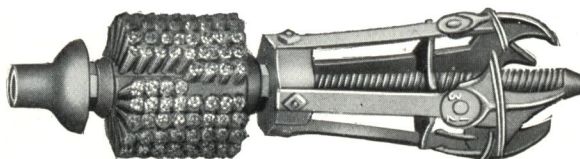


Fig. 4648. Pilley's Combination Cleaner



Fig. 4650. Perfect

Boiler Tube Cleaners

Perfect Tube Cleaner

Tube Size.....	1½	1¾	2	2¼	2½	2¾	3	3¼	3½	3¾	4	4½	5	6
Price, each.....	2.00	2.00	2.00	2.25	2.50	2.75	3.00	3.25	3.50	3.75	4.00	4.50	5.00	6.00

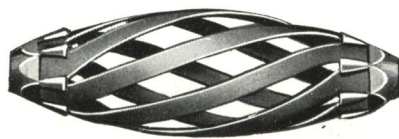


Fig. 4651. Perfection

Perfection Cleaner

Tube Size, inches.....	1¼	1½	1¾	2	2¼	2½	2¾	3	3¼	3½	4	4½	5	6
Price, each.....	2.00	2.00	2.00	2.00	2.25	2.50	2.75	3.00	3.25	3.50	4.00	5.00	6.00	7.00

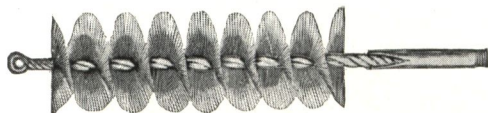


Fig. 4652. Spiral Brush
Tube Sizes to 6-inch

Per Inch Diameter..... 1.00



Fig. 4653. Coil Brush
Tube Sizes to 4-inch

Per Inch Diameter..... 1.00

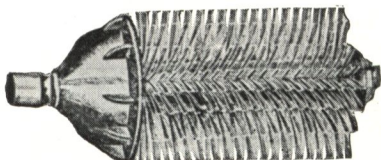


Fig. 4654. Tube Brush
For All Sizes of Tubes

Per Inch Outside Diameter..... 1.25

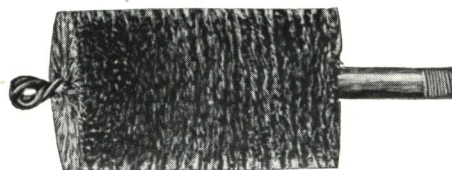


Fig. 4655. Fine Round Wire

Per Inch Diameter..... 1.00

Pilley's Flue Brushes

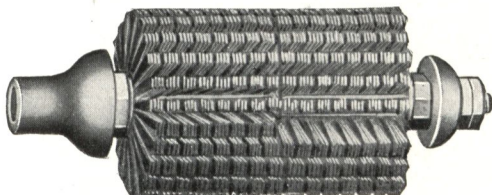


Fig. 4656. Expansion Flue Brush
For All Sizes of Tubes 1½ to 9-inch

Sizes smaller than 2-inch same price as 2-inch

Price Per Inch Diameter..... 1.00

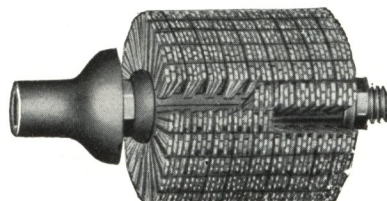


Fig. 4657. Abrams Flue Brush
For All Sizes of Tubes 2 to 6-inch

Price Per Inch Diameter..... 1.00

In Fig. 4656 the sections are so arranged that the open space between them does not extend the entire length of the brush, and thus cleans the whole of the flue each time it is pushed through. The conical cap not only protects the wire, but allows the brush to slide back into the flue in case it is pushed entirely through. Made entirely of steel and malleable and is both substantial and effective.

Fig. 4657 is the same in general construction, but cannot be expanded, and being only about one half as long as the expansion, is lower in price. Is strong and well made, with all iron center and wires are guaranteed not to come out or lay over. Will give good satisfaction where a cheap brush is required.

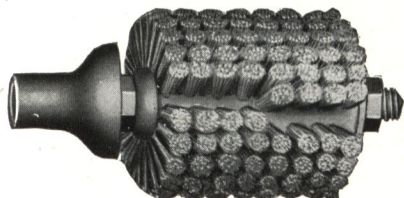


Fig. 4658

Fine Wire Flue Brush, made with Iron Center
For All Sizes of Tubes 2 to 6-inch

Price Per Inch Diameter..... 1.00

Pilley's Fine Wire Flue Brush

This Brush, being made of fine round wire, is not as stiff nor heavy as the Abrams, and is recommended for flues where a very stiff brush is not needed. Strongly made with iron center.

Boiler Tube Cleaners



Fig. 4660 Horizontal Pattern

Steam connection, all sizes. $\frac{1}{2}$ -inch iron pipe thread

In ordering Vertical Pattern, give distance from top of fire door to tubes, and diameter of boiler.

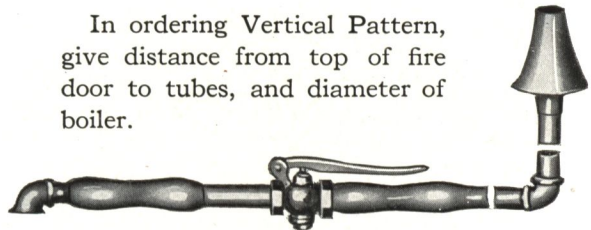


Fig. 4661. Vertical Pattern

Hurricane Steam Flue Cleaner

Soot and ashes do not blow back on the operator. Valve opens wide when entering tube, closes when withdrawn. Uses steam only when in operation. Very light and easy to handle.

For Tube Sizes.....	2 to 2½	3 to 3½	4 to 4½
Horizontal Pattern.....	6.00	7.00	8.00
Vertical Pattern.....	6.50	....	....

Cleaners for tubes 2 to 2½ have hand valve; other sizes, Automatic, Vertical Pattern made one size only.

Tornado Boiler Tube Cleaner

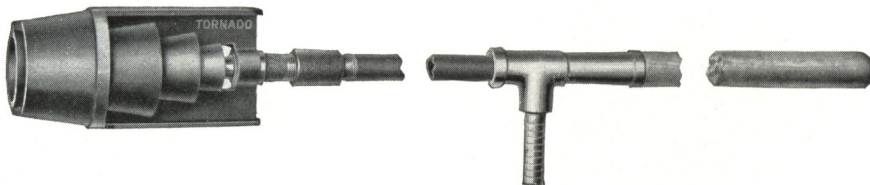


Fig. 4662. Tornado Boiler Tube Cleaner

A $\frac{5}{16}$ -inch steam jet actuates a blast of heated air that blows the soot out dry. It is a veritable tornado. The blower-head is brass. Has no moving parts. Requires minimum steam supply for operation. Cleans any length tube. Is self balanced and has no back pressure against the operator. Light and easy to handle. All cleaners are supplied with 15 inches of $\frac{1}{2}$ -inch pipe, $\frac{1}{2}$ -inch hose connection, and 25-inch wood handle.

Tornado Boiler Tube Cleaners

No.....	3	4	5
For Tube Sizes, inches, inclusive.....	2 to 3	3½ to 4	4½ to 5
Price, each.....	16.00	18.00	20.00

When ordering, state exact diameter of tubes. If boiler is vertical, give distance from back of fire box to outside fire door, and height from top of fire door to flue sheet.

The Grimm Injector Blower



Fig. 4663. Horizontal

Enlarged Section of Nozzle

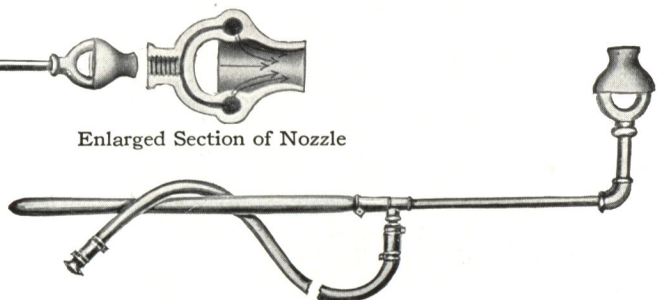


Fig. 4664. Vertical

For cleaning Horizontal and Vertical Boiler Tubes. Requires minimum amount of steam. Has no working parts to get out of order.

No.....	0	1	2	3
For Tube Sizes, inches.....	1 to 2	2 to 3	3 to 4	4 to 5
Price, Head Only.....	5.00	6.00	7.00	9.00
Price, Head, Handle, Tip and Pipe.....	6.00	7.00	8.00	10.00
Price, Complete with 8-foot Hose, Coupled.....	10.00	11.00	12.00	15.00

Perfection Saddle Casting Brush



Fig. 4670

The saddle or girder used in this brush prevents the wire from bending or springing out at the sides or ends. It is the only device that affords a complete protection. They cost but a trifle more than the regular make brush, but owing to their prolonged service a much less quantity will be required.

Sizes and List Prices

No.	1	2	3	4	5	6	7	8	9
Row	4	4	4	4	5	5	5	5	5
Inches	2	3	4	5	2	3	4	5	6
Per Dozen	4.20	4.60	4.90	5.60	4.50	5.00	5.40	6.50	7.00

Butcher Block Brush

Will outwear several regular make brushes. Does not dig into the block—leaves surface perfectly smooth. Easily cleaned by drawing over edge of bench or block. With the wire girdle it is impossible for the wires to spread or bend over.

List Price, each..... .50



Fig. 4671. Butcher Block Brush

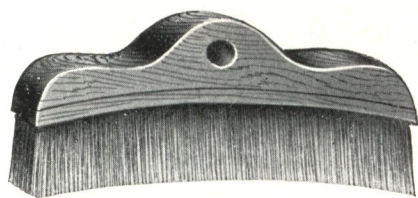


Fig. 4672. External Use

Steel Wire Boiler Brushes

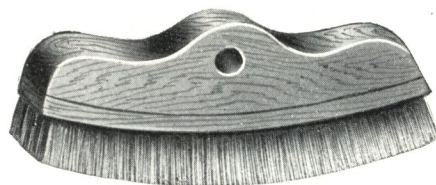


Fig. 4673. Internal Use

No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Boiler Diameter, inches	28	30	32	34	36	38	40	42	44	46	48	50	52
Each	1.00	1.25	1.50	1.75	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80

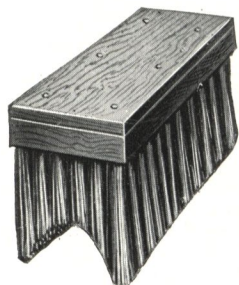


Fig. 4674

Steel Wire Condenser Pipe Brushes

Ground to fit any size pipe

Pipe Size	Price Per Dozen
1	12.00
1 1/4	14.00
1 1/2	16.00
2	20.00
2 1/2	24.00



Fig. 4678. Heater Brush

2 inches wide, 3 inches long. Wire 3/4 inch; brush 1 inch thick.
Per dozen..... 6.00

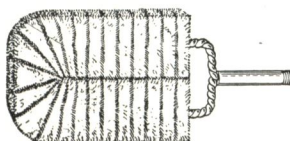


Fig. 4675. Heater Brush

Size Inches	Length Inches	Each
1 3/4 x 4 1/2	6	1.50
2 x 4 1/2	6	2.00
2 1/2 x 6	6	2.50
2 3/4 x 6	6	3.00



Fig. 4677. Heater Brush

5 inches wide, 3 inches long, with 3/4-inch wire; thickness of brush 1 inch over all.
Per dozen..... 9.00



Fig. 4676. Heater Brush

2 1/4 x 4	Oval, per dozen	7.50
3 x 5	Oval, per dozen	9.00
3 1/2 x 5 1/2	Oval, per dozen	10.00
4 x 6	Oval, per dozen	12.00



Fig. 4679. Heater Brush

Width Inches	Length Inches	Thickness Inches	Each
3	5	2 1/2	2.00
5	7	2 1/2	3.00

Fire Tools—Regular Pattern

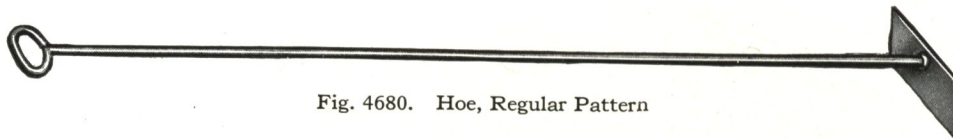


Fig. 4680. Hoe, Regular Pattern

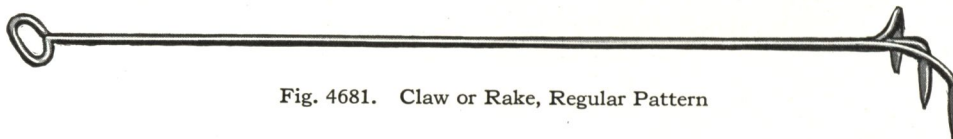


Fig. 4681. Claw or Rake, Regular Pattern



Fig. 4682. Slice Bar, Regular Pattern



Fig. 4683. Poker, Regular Pattern

Hoes—Regular Pattern

Size Head Inches	Diameter Rod, Inch	4-Foot Handle	5-Foot Handle	6-Foot Handle	7-Foot Handle	8-Foot Handle	9-Foot Handle	10-Foot Handle	11-Foot Handle	12-Foot Handle
3 x 5	$\frac{1}{2}$	1.50	1.60	1.70	1.80	1.90	2.00	2.10	2.20	2.30
$3\frac{1}{2}$ x $5\frac{1}{2}$	$\frac{5}{8}$	1.65	1.75	1.85	1.95	2.05	2.15	2.25	2.35	2.45
4 x 6	$\frac{5}{8}$	1.80	1.90	2.00	2.10	2.20	2.30	2.40	2.50	2.60
$4\frac{1}{2}$ x 7	$\frac{3}{4}$	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	3.00
5 x 8	$\frac{3}{4}$	2.60	2.70	2.80	2.90	3.00	3.10	3.20	3.30	3.40
$5\frac{1}{2}$ x 9	$\frac{7}{8}$	3.00	3.10	3.20	3.30	3.40	3.50	3.60	3.70	3.80
6 x 10	$\frac{7}{8}$	3.40	3.50	3.60	3.70	3.80	3.90	4.00	4.10	4.20
$6\frac{1}{2}$ x 11	1	3.80	3.90	4.00	4.10	4.20	4.30	4.40	4.50	4.60
7 x 12	1	4.20	4.30	4.40	4.50	4.60	4.70	4.80	4.90	5.00

Claw or Rake

3 Prongs 5 inches long, $\frac{5}{8}$ to 1 inch	1.50	1.75	2.00	2.50	3.00	3.50	4.00	4.50	5.00
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Slice Bar

$1\frac{1}{2}$ to 2 inches wide, $\frac{5}{8}$ to 1 inch	1.50	1.75	2.00	2.50	3.00	3.50	4.00	4.50	5.00
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Poker

1 Prong 5 inches long, $\frac{5}{8}$ to 1 inch	1.00	1.25	1.50	2.00	2.25	2.75	3.00	3.50	3.75
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Heavy Pattern Firing Tools

Hoe—With Welded Handle and Reinforced Head

Size Head Inches	Diameter Rod Inches	6-Foot Handle	7-Foot Handle	8-Foot Handle	9-Foot Handle	10-Foot Handle	11-Foot Handle	12-Foot Handle
4 x 6	$\frac{5}{8}$ to $\frac{3}{4}$	3.00	3.10	3.20	3.30	3.40	3.50	3.60
$4\frac{1}{2}$ x 7	$\frac{5}{8}$ to $\frac{3}{4}$	3.40	3.50	3.60	3.70	3.80	3.90	4.00
5 x 8	$\frac{3}{4}$ to $\frac{7}{8}$	3.80	3.90	4.00	4.10	4.20	4.30	4.40
$5\frac{1}{2}$ x 9	$\frac{3}{4}$ to $\frac{7}{8}$	4.20	4.30	4.40	4.50	4.60	4.70	4.80
6 x 10	$\frac{7}{8}$ to 1	4.60	4.70	4.80	4.90	5.00	5.10	5.20
$6\frac{1}{2}$ x 11	$\frac{7}{8}$ to $1\frac{1}{8}$	5.00	5.10	5.20	5.30	5.40	5.50	5.60
7 x 12	$\frac{7}{8}$ to $1\frac{1}{4}$	5.40	5.50	5.60	5.70	5.80	5.90	6.00
7 x 14	1 to $1\frac{1}{4}$	5.80	5.90	6.00	6.10	6.20	6.30	6.40

Rake With Welded Handle

3 Prongs 5 inches long, $\frac{3}{4}$ to $1\frac{1}{4}$	3.00	3.50	4.00	4.50	5.00	5.50	6.00
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Slice Bar With Welded Handle

$1\frac{1}{2}$ and 2 inches wide, 1 to $1\frac{1}{2}$ inch	3.00	3.50	4.00	4.50	5.00	5.50	6.00
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Poker With Welded Handle

1 Prong 5 inches long, $\frac{3}{4}$ to $1\frac{1}{4}$ inches	2.00	2.50	3.00	3.50	4.00	4.50	5.00
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Note: In ordering state pattern wanted, size head for hoe, size and length of rod.

Albany Grates

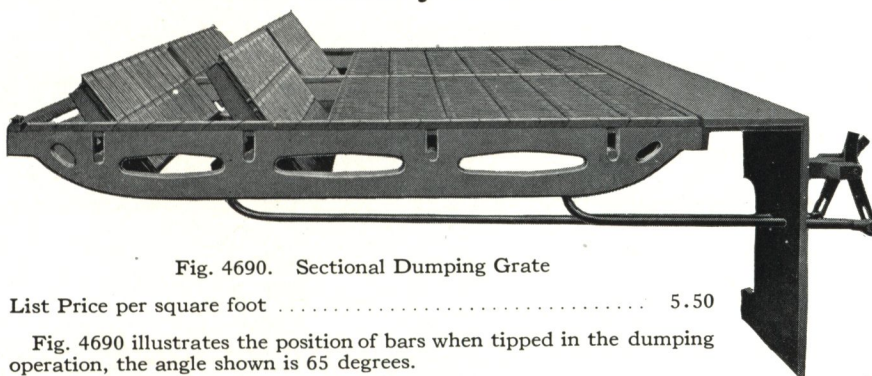


Fig. 4690. Sectional Dumping Grate

List Price per square foot 5.50

Fig. 4690 illustrates the position of bars when tipped in the dumping operation, the angle shown is 65 degrees.

In the Albany Sectional Dumping Grate we have a principle entirely new, that of a complete sectional fire surface top. The sections on the grates, side frames and end pieces being superimposed.

The average weight of the Albany Sectional Dumping Grate is 85 pounds per square foot. This weight of highest quality material and workmanship insures durability and forestalls the possibility of breakage. The complete sectional fire surface top absolutely prevents warpage, enabling us at the same time to obtain the correct percentage of air area desired.

The maximum per cent air area is as follows: Pea or larger, 65 per cent. air opening; No. 1 Buckwheat, 50 per cent. air opening; No. 2 Buckwheat, 50 per cent. air opening, and smaller sizes from 4 to 35 per cent. air opening.

Sectional Shaking Grate

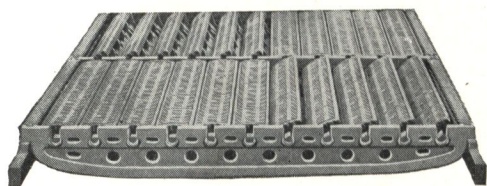


Fig. 4691. Sectional Shaking Grate

List Price per square foot 5.50

Standard size air-space openings. Pin-hole air space for special fine fuels.

- $\frac{1}{8}$ -inch opening for special fine fuel, or mixtures.
- $\frac{3}{16}$ -inch opening for Anthracite Rice, No. 3 Buckwheat, etc.
- $\frac{1}{4}$ -inch opening for Anthracite No. 2 Buckwheat and screenings.
- $\frac{5}{16}$ -inch opening for Anthracite No. 1 Buckwheat.
- $\frac{3}{8}$ -inch opening for Anthracite Pea, Bituminous coals and sawdust.
- $\frac{1}{2}$ -inch opening for Anthracite larger than Pea, Bituminous coals and sawdust.
- $\frac{5}{8}$ -inch opening for Anthracite Stove and Bituminous.
- $\frac{3}{4}$ -inch opening for Anthracite Broken and Bituminous lump.

This grate is particularly adapted to the burning of bituminous coal. The agitation of the grates, or shaking motion, forms a pocket into which the ash is cut by the first movement of the grate. Reversing the grate chops the ash from the live fuel and dumps it into the ash pit beneath. The pockets prevent loss or running of fuel.

Its natural position shows the uniform sectional fire surface which is thoroughly protected against breakage. With the self-locking journals the bearings in the side or carrying frame allow the removal of the grates only when released from the connecting bar and tilted to an angle of 90 degrees.

The distinctive features of the Albany Sectional Grate may be briefly stated as follows:

- (1) It is sectional.
- (2) The sections are protected against breakage.
- (3) It has corrugated reinforced cutting edges, front and rear.
- (4) All parts are machine molded with great accuracy, and cast from the best quality of foundry irons.
- (5) It has self-locking journals.
- (6) It has interchangeable grate bars and fire surface, and all parts of all sizes are standardized.
- (7) The sections allow for expansion.
- (8) There are no fingers or overlapping joints to burn or break.
- (9) It is guaranteed not to break, burn or warp.

Tupper and Adams Grate Bars

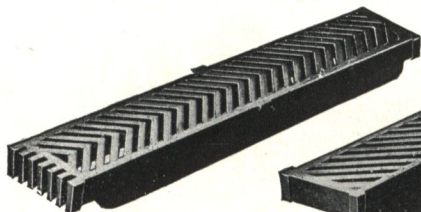


Fig. 4692. Tupper

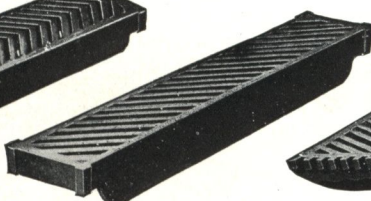


Fig. 4693. Adams Stationary

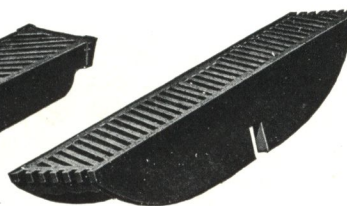


Fig. 4694. Adams Dumping

Made for any length and width of furnace and any size coal. In ordering or requesting prices give complete dimensions and size air space. Circular Grates furnished to sketch at lowest prices.

Jack Screws

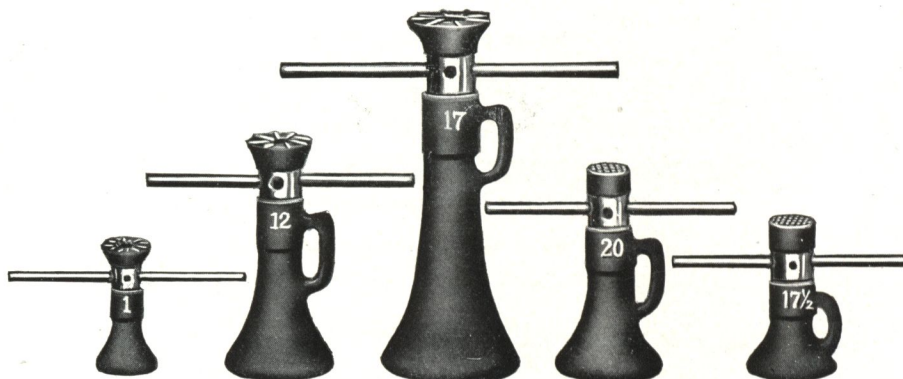


Fig. 4700. Jack Screws

These Jack Screws are of high grade construction and are easy acting; barrels of cast iron; screws of steel; threads on the screws lathe cut.

No.	Diameter of Screw Inches	Height of Barrel Inches	Minimum Height of Jack Inches	Net Rise Inches	Maximum Height of Jack Inches	Weight Pounds	Estimated Lifting Capacity Tons	Price With Lever	Price Without Lever
1	1 1/4	6	9	4	13	8 1/2	5	2.20	2.00
2	1 1/4	7	10	6	16	9 1/2	5	2.50	2.30
3	1 1/2	7	10 3/4	5	16	16	8	2.70	2.50
4	1 1/2	9	12 3/4	7	20	20 1/2	8	3.10	2.90
5	1 1/2	11	14 3/4	9	24	22 1/2	8	3.20	3.00
6	1 3/4	9	12 1/4	6	18	22 1/2	12	3.40	3.10
7	1 3/4	10 1/2	14 1/4	8	22	25	12	3.60	3.30
8	1 3/4	12 1/2	16	10	26	29	12	3.90	3.60
9	1 3/4	14 1/2	18 1/4	12	30	32	12	4.30	4.00
10	2	8	12 1/4	5	17	27	15	4.30	3.90
11	2	10	14	7	21	31	15	4.60	4.20
12	2	12	16 1/4	9	25	35	15	5.30	4.90
13	2	16	20 1/4	13	33	41	15	6.00	5.60
14	2 1/2	9 1/2	15	8	23	45 1/2	20	6.40	5.70
15	2 1/2	11 1/2	16 3/4	10	27	50	20	7.10	6.40
16	2 1/2	15 1/2	20 3/4	14	35	62	20	8.10	7.40
17	2 1/2	19 1/2	25	18	43	75	20	9.50	8.80

Car Jacks

17 1/2	2	6	10	4	14	19 1/2	15	3.90	3.50
18	2	8 1/2	12 1/2	5	17	25	15	4.30	3.90
19	2	10 1/2	14 1/4	7	21	29	15	4.60	4.20
20	2	12	16	9	25	35	15	5.30	4.90

N. B.— Jack screws are furnished with levers unless ordered without.

Jack Screw Nos.	1, 2, 3, 4, 5	6, 7, 8, 9	10, 11, 12, 13 17 1/2, 18, 19, 20	14, 15, 16, 17
Diameter of Lever, inch.	5/8	3/4	1 1/8	1
Length of Lever, inches.	17	18	19	24
Weight of Lever, pounds.	1 1/2	2 1/4	2 3/4	5 1/4
Price of Lever	.20	.30	.40	.70

Roller Bearing Ratchet Jack Screw

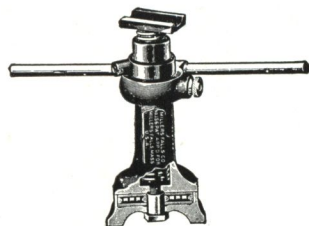


Fig. 4701

Roller Bearing Ratchet Jack Screw

Cast iron barrel, steel screw and cap or platform.
 Within the base, hardened steel rollers in cages and operating between two hardened steel discs.
 A steel kingbolt passes through stationary base into the barrel and revolves with the latter.
 A ratchet operates either to right or left by turning a knurled knob on the side of the ratchet-collar.
 The plunger or ratchet dog is encased by a steel bushing.
 Acme thread on screw perfectly cut and meshing correctly with the barrel.
 Cap or platform is concave, adapted to axles or other rounded surfaces. The cap is set fast to the screw and the two remain stationary while the barrel is revolved around the latter.
 An automatic stop prevents the screw from being turned out of the barrel when at its topmost point.
 This Jack Screw is made especially for raising automobile trucks, railway cars (freight or passenger), etc., and is the most inexpensive and efficient tool made for the purpose.
 Minimum height, 11 3/8 inches; maximum height, 18 inches; weight, 22 3/4 pounds; estimated lifting capacity, 15 tons. (The lever ordinarily furnished is 17 inches in length and is not recommended for more than a 7-ton load, but when ordering for greater loads, a 3-foot tool steel lever is furnished at additional cost.)
 Price, with Lever, each..... 7.00

Dudgeon Universal Hydraulic Double Pump Jacks

Distinctive Advantages

The following is a summary of advantages peculiar to this jack:
 It is the only jack of the vertical type with a double pump.
 It is the only double pump jack with but a single pressure valve.
 It is the only double pump jack with but three valves in all.
 It is the only jack having but one pressure valve, which lowers by means of an independent lowering device.
 It is the only jack lowering by means of both the lever and the valve handle.
 It is the only jack in which the position of the valves is indicated by means of the lowering device.
 It is the only jack that can be used horizontally with the lever working at any angle.
 It is the only jack with superimposed valves and pistons.
 It is the only jack provided with valves that will perform each other's work in case of necessity.
 It is the only jack with pistons that will perform each other's work in case of necessity.
 It is the only jack in which the pump may be used while the valves are open.
 It is the only jack giving access to the valves by the removal of one bonnet.

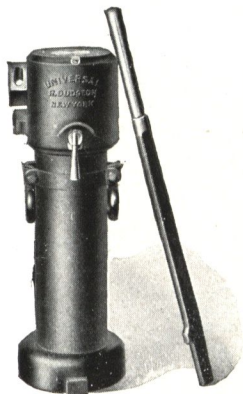


Fig. 4710. Plain Jack
 For use in presses or where there is a firm foundation or support



Fig. 4711. Railroad Jack
 For work where stability and portability are required

Fig. 4710

No.	Lift Tons	Run Out Inches	Height Inches	Diameter of Base Inches	Weight Pounds	Price
580	10	12	25	6	80	80.00
581	10	18	32	6	98	95.00
582	10	24	39	6	110	110.00
583	15	12	26	6½	102	100.00
584	15	18	32	6½	120	125.00
585	15	24	39	6½	140	150.00
586	20	12	26	7	127	120.00
587	20	18	33	7	155	145.00
588	20	24	39	7	180	170.00
589	30	9	22	8	146	150.00
590	30	12	26	8	194	175.00
591	30	18	33	8	260	210.00
592	40	12	27	9	280	210.00
593	40	18	34	9	320	240.00
594	50	12	28	10	333	240.00
595	50	18	33	10	374	290.00
596	60	12	28	11	350	290.00

Note: Bottoms are made square up to 30 tons; 30 tons and larger sizes have round bottoms.

Fig. 4711

No.	Lift Tons	Run Out Inches	Height Inches	Diameter of Base Inches	Weight Pounds	Price
597	10	12	25	11	105	90.00
598	10	18	31½	11	146	100.00
599	10	24	39	11	145	115.00
600	15	12	25	11	135	115.00
601	15	18	31	11	155	140.00
602	15	24	39	11	176	165.00
603	20	12	26	12	167	140.00
604	20	18	33	13	203	165.00
605	20	24	39	12	205	185.00
606	30	9	21	12	190	160.00
607	30	12	26	12	206	185.00
608	30	18	32	13	255	220.00
609	40	12	27	13	265	220.00
610	40	18	32	13	310	260.00
611	50	12	28	15	374	250.00
612	50	18	33	15	350	300.00
613	60	12	27	16	320	300.00

Dudgeon Universal Hydraulic Double Pump Claw Jack

For general use and for work that will not permit the head to be placed under the load

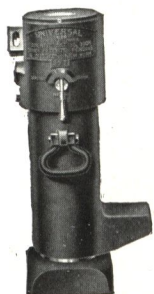


Fig. 4712. Claw Jack

No.	Lift Tons	Run Out Inches	Height Inches	Weight Pounds	Price
629A	10	12	25	125	100.00
629B	10	18	32	144	120.00
629C	15	12	26	162	150.00
629D	15	18	32	190	185.00
629E	20	12	26	203	200.00
629F	20	18	33	245	240.00
630	30	9	22	290	225.00
631	30	12	26	310	250.00
632	30	18	32	364	285.00
633	40	12	27	355	300.00
634	40	18	34	460	325.00
635	50	12	27	450	325.00

Car Inspectors' Double Pump Jack

This is the latest improved type of car inspectors' jack, and the only one of this form made with a double pump. This jack contains the fewest possible number of pieces, and is the simplest and most efficient jack on the market. This jack lowers by either the valve handle shown in cut, or by the lever. In raising a steel car the valve handle is turned downward, throwing out the other pump and giving a lift of the full capacity of the jack. When an empty car or a light wooden car is lifted the valve handle is turned horizontally to the left, which permits the use of both pumps, lifting the load at twice the ordinary speed. This is a great saving of time.

No.	Lift Tons	Run Out Inches	Height Inches	Size of Round Base Inches	Weight Pounds	Price
462	15	5	11	6	48	80.00
463	20	5	11	7	58	100.00
464	25	4	11	7½	76	115.00
465	30	4	11	8	89	130.00

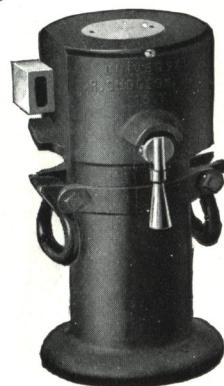


Fig. 4713. Car Inspectors' Jack

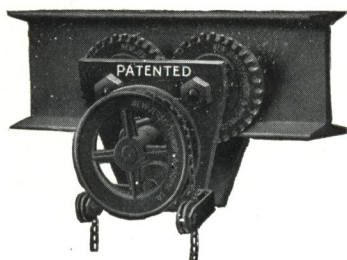


Fig. 4720. Trolley

I-Beam Trolleys

I-Beam Trolley—"Changeezy"

This Trolley can be made plain or geared at will of operator, the change from one to the other requiring but half a turn of the hand chain wheel. Made with steel side plates and adjustable to three sizes of beam standard, or to any size specified in order.

Capacity in Tons	Graphite Bronze Bushed	Ball or Roller Bearing	Standard Sizes of Beams	Distance Between Loop and Eye Inches	Tread Diameter of Wheels Inches	Weight Pounds
1	28.75	35.00	6-7-8	5½	4¾	120
1½	30.63	37.50	7-8-9	5⅝	4¾	130
2	32.50	40.00	8-9-10	7⅛	5¼	140
3	40.00	47.50	9-10-12	9	6	175
4	50.00	57.50	10-12-15	9¼	6¾	185
5	60.00	67.50	12-15-18	11⅜	9	345
6	65.00	75.00	15-18-20	11⅜	9	365
8	85.00	97.50	18-20-24	15	10¼	500
10	105.00	120.00	18-20-24	16	13	600

I-Beam Trolley—"Delta"

The wheels of both Changeezy and Delta trolleys are inclined to run true on lower flanges of the beam, the axle connecting swivels equalizing the load on all wheels and the load force lines radiate from the inside of the hoist link. Delta trolleys are made standard for three sizes of beam adjustability, or for any size if specified in order.

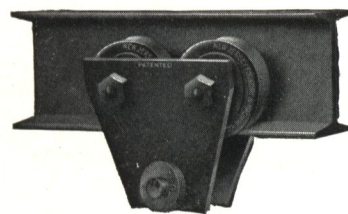


Fig. 4721. Trolley

Capacity in Tons	Graphite Bronze Bushed	Ball or Roller Bearing	Standard Sizes of Beams	Distance Between Loop and Eye Inches	Tread Diameter of Wheels Inches	Weight Pounds
½	11.25	17.50	5-6-7	4½	3¾	25
1	13.75	20.00	6-7-8	5½	4¼	40
1½	16.88	23.75	7-8-9	5⅝	4¾	80
2	20.00	27.50	8-9-10	7⅛	5¼	120
3	27.50	35.00	9-10-12	9	6	135
4	33.75	42.50	10-12-15	9¼	6¾	140
5	40.00	50.00	12-15-18	11⅜	9	310
6	45.00	55.00	15-18-20	11⅜	9	400
8	65.00	77.50	18-20-24	15	10¼	450
10	80.00	95.00	18-20-24	16	13	500



Fig. 4722. Trolley Hoist

Trolley Hoist

Made up of regular hoist and trolley parts combined to obtain minimum head-room. It is made to fit the sizes of beam specified only and has no advantage other than headroom.

Capacity in Tons	Standard Lift in Feet	Price	Extra Lift Per Foot	Size Beam	Distance Between Hook and Beam Inches	Weight Pounds
¼	8	60.00	1.05	5	7¼	75
½	8	65.00	1.20	5	7½	77
1	8	85.00	1.25	6	9½	120
1½	8	105.00	1.30	7	12	160
2	9	130.00	1.35	8	14	210

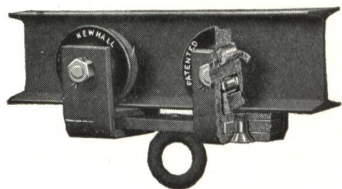


Fig. 4730. Newhall Trolley

I-Beam Trolleys, Track and Crane

Newhall Trolley

Made with steel yokes swiveled to connecting bar, allowing wheels to take radial position on curves.

Can be furnished to run on other sizes of beams than those listed, if specified when ordering.

Capacity, Tons	Ball Bearing	Size Beam Inches	Distance Eye to Beam, Inches	Tread Diameter of Wheels, Inches	Weight, Pounds
$\frac{1}{2}$	17.50	5	$4\frac{1}{4}$	$3\frac{5}{8}$	25
1	20.00	6	$5\frac{1}{8}$	$4\frac{1}{4}$	40
$1\frac{1}{2}$	23.75	7	$5\frac{3}{4}$	$4\frac{5}{8}$	80
2	27.50	8	$6\frac{7}{8}$	$5\frac{1}{2}$	120
3	35.00	9	$7\frac{3}{4}$	$6\frac{1}{2}$	135
4	42.50	10	$8\frac{1}{2}$	8	140
5	50.00	12	$9\frac{3}{4}$	9	200

Bar Track

Capacity, Tons	Price per Foot for Track	Trolleys	Switches
$\frac{1}{4}$	.50	6.25	5.00
$\frac{1}{2}$	.57	7.00	5.50
$\frac{3}{4}$	.81	8.75	7.00
1	.88	9.50	7.50
$1\frac{1}{2}$	1.00	20.00	10.00
2	1.25	25.00	10.00

Price per foot of track includes standard 9-inch hangers.

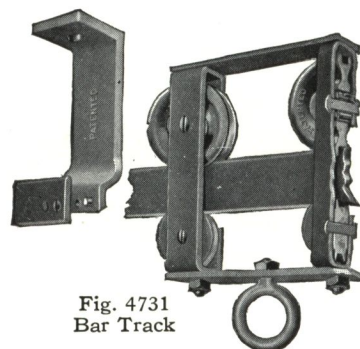


Fig. 4731 Bar Track

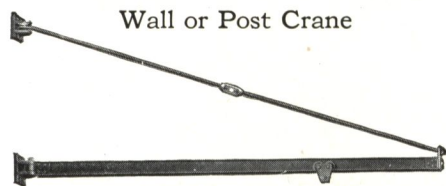


Fig. 4732. Wall or Post Crane

Built with self-lubricating bearings. Tie rods are double and arranged to allow some variation in height and length. Brackets are built up of steel shapes, and plates are drilled for attachments as specified within range of standard bracket design.

Capacity Tons	Length Feet	Height Feet	Size I-Beam	Price Crane Only	Approx. Weight Crane Only Pounds
$\frac{1}{2}$	11	4	5	55.00	400
$\frac{1}{2}$	13	5	6	60.00	500
$\frac{1}{2}$	16	6	7	65.00	600
$\frac{1}{2}$	20	7	8	70.00	650
1	11	4	6	60.00	450
1	13	5	7	65.00	500
1	16	6	8	70.00	600
1	20	7	9	75.00	700
$1\frac{1}{2}$	11	4	7	65.00	500
$1\frac{1}{2}$	13	5	8	70.00	550
$1\frac{1}{2}$	16	6	9	75.00	700
$1\frac{1}{2}$	20	7	10	80.00	850
2	11	4	8	75.00	550
2	13	5	8	80.00	600
2	16	6	9	85.00	750
2	20	7	10	90.00	900
3	11	4	9	85.00	550
3	13	5	9	85.00	650
3	16	6	10	90.00	800
3	20	7	12	100.00	1000

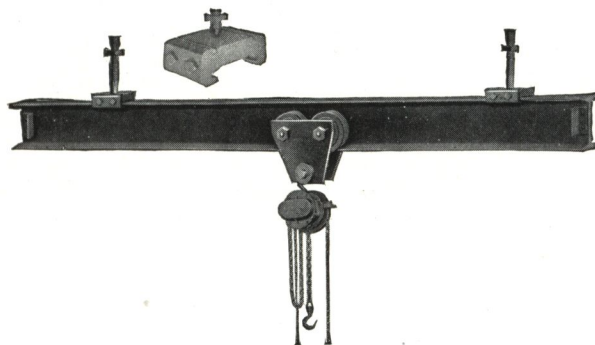


Fig. 4733

Sectional Track Combination

When ordering state length of bolts desired.

List Prices 12 Feet of Track with Clamps and Bolts

Capacity Tons	Size Beam Inches	Price	Add for Additional Length per Foot
$\frac{1}{2}$	5	11.00	.75
1	6	13.50	1.00
$1\frac{1}{2}$	7	15.00	1.15
2	8	16.50	1.35
3	9	18.00	1.50
4	10	20.00	1.90
5	12	25.00	2.25

Add 2.00 per foot for alternating current conductors.
Add 1.50 per foot for direct current conductors.

Yale Blocks

Tested to Fifty Per Cent. Overload and Rated on the Basis of 2,240 Pounds to the Ton

Yale Triplex Block

The Yale Triplex Block is unequalled for ease and safety of operation. Its independent automatic load sustaining device, operated entirely separate from its lifting mechanism, admits of eighty per cent. of the power exerted by a man pulling on the hand chain being transformed into actual lifting energy. Has eighty per cent. efficiency.

List Price				
Rated Capacity in Tons 2240 Lbs. to the Ton	Complete Block with Standard Hoist	Standard Hoist in Feet	Extra Hoist Per Foot	Weight Pounds
1/4	35.00	8	.90	58
1/2	35.00	8	.90	58
1	45.00	8	.95	91
1 1/2	60.00	8	1.00	131
2	70.00	9	1.05	200
3	90.00	10	1.50	206
4	110.00	10	1.60	293
5	140.00	12	2.15	407
6	165.00	12	2.15	407
8	200.00	12	2.70	497
10	240.00	12	3.25	606
12	300.00	12	4.30	898
16	360.00	12	5.40	1005
20	425.00	12	6.50	1326
32				
40				

Prices and full particulars on request.



Fig. 4740
Triplex

Yale Differential Blocks

The genuine Yale Weston Differential Blocks have large sheaves and full-sized chain of special material gauged by a patented process which hardens it and ensures its gearing accurately with the correctly formed pockets in the sheaves.

This precludes the stretching of the chain which, in imitations, quickly destroys their usefulness and safety.

These blocks handle heavy loads readily and are sold at the lowest price possible for reliable blocks.

Capacity in Tons	Price Complete	Regular Hoist in Feet	Extra Hoist Price Per Foot*	Weight Pounds
1/4	18.00	6	2.80	22
1/2	21.00	7	2.80	30
1	28.00	8	3.00	51
1 1/2	36.00	8 1/2	3.20	81
2	45.00	9	3.40	122
3	60.00	9 1/2	4.00	180

*Each foot of extra hoist includes 4 feet of chain.

Look for the name Yale on both the top and bottom sheaves.



Fig. 4742
Differential

Yale Duplex Blocks

This is the popular type of double chain worm-wheel, or screw block. The load chain sheaves are carried on a steel shaft, and fitted with safety guides.

They have bronze worm-wheels and steel worms with hardened and ground thrust bearings, running in oil.

For portable use these are light, powerful chain blocks and take up the least head-room.

One man can lift as much as three men with a Differential Block and the block will last many times as long.

Capacity in Tons	Price	Hoist in Feet	Extra Hoist Per Foot	Weight Pounds
1/2	25.00	8	1.25	43
1	30.00	8	1.30	57
1 1/2	40.00	8	1.35	76
2	50.00	9	1.40	104
3	75.00	10	1.50	180
4	95.00	10	1.90	215
5	140.00	12	2.00	330
6	180.00	12	2.80	320
8	210.00	12	3.00	380
10	275.00	12	3.20	555



Fig. 4741
Duplex

"Brownhoist" Steel Trolleys

Strong, durable and easy running. They go on the I-beam at any point, and they have self-oiling equalizing bearings.

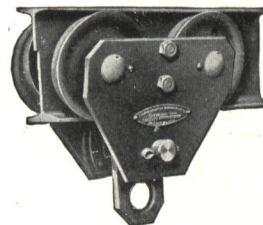


Fig. 4743. Plain

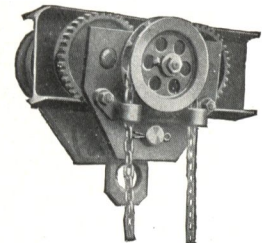


Fig. 4744. Geared

Capacity in Tons	Standard Size of I-Beam* Inches	Greatest Distance Between Supports Feet	Diameter of Tread of Wheels Inches	Price Plain Trolley	Price Geared Trolley
1/4	4	13	3	14.00	.....
1/2	5	14	3 3/4	16.00	.....
1	6	14	4 3/4	20.00	40.00
1 1/2	7	15	5 1/2	25.00	45.00
2	8	16	6 1/2	30.00	50.00
3	9	16	7 1/4	40.00	60.00
4	10	16	8 1/4	50.00	70.00
5	12	18	10	65.00	90.00
6	15	22	10	80.00	100.00
8	20	29	12	95.00	110.00
10	24	34	13	110.00	130.00
12	24	23	13	110.00	130.00
15	24	20	18	180.00	220.00
20	24	16	18	200.00	250.00

*Can be altered to suit larger beams.

Harrington Chain Hoists

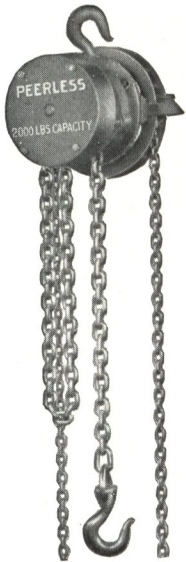


Fig. 4750. Peerless

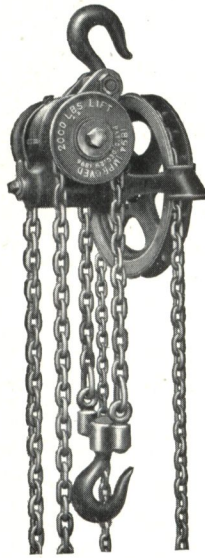


Fig. 4751. Screw



Fig. 4752. Differential

Harrington Peerless Hoist

Capacity in Pounds	Regular Lift Feet	Price of Hoist Regular Lift	Price of Extra Lift Per Foot	Distance Between Hooks		Weight of Hoist (Regular Lift), in Pounds	
				Shortest Inches	Reach (Reg. Lift) Feet—Inches	Net	Gross (Boxed)
500	8	30.00	.85	13	9—1	48	70
1000	8	35.00	.90	14	9—2	62	74
2000	8	45.00	.95	16	9—4	84	100
3000	8	60.00	1.00	19	9—7	115	151
4000	9	70.00	1.05	22 1/4	10—10 1/4	157	196
6000	10	90.00	1.25	24	12—0	236	314
8000	10	110.00	1.60	29	12—5	230	290
10000	12	140.00	2.00	32	14—8	352	451
12000	12	165.00	2.00	34 1/2	14—10 1/2	359	458
16000	12	200.00	2.75	39 3/4	15—3 3/4	460	595
20000	12	240.00	3.20	42	15—6	533	659
30000	12	340.00	4.60	55 1/4	16—7 1/4	995	1275
40000	12	425.00	6.40	62 1/4	17—2 1/4	1260	1560

Harrington Screw Hoist

Capacity Pounds	Regular Lift Feet	Price of Hoist Regular Lift	Price of Extra Lift Per Foot	Distance Between Hooks		Weight of Hoist (Regular Lift), in Pounds	
				Shortest Inches	Reach (Reg. Lift) Feet—Inches	Net	Gross (Boxed)
500	8	22.50	1.10	14 1/2	9—2 1/2	43	65
1000	8	25.00	1.20	17	9—5	71	103
2000	8	30.00	1.30	18	9—6	78	110
3000	8	40.00	1.40	19	9—7	111	151
4000	9	50.00	1.44	22	10—10	167	224
6000	10	75.00	1:50	30	12—6	250	346
8000	10	95.00	1.70	32	12—8	329	447
10000	12	140.00	2.20	39	15—3	480	632
12000	12	180.00	2.50	39 1/2	15—3 1/2	557	697
16000	12	210.00	2.90	41	15—5	751	876
20000	12	275.00	2.90	47	15—11	789	930
30000	12	340.00	5.10	51 3/4	16—3 3/4	1159	1431

Harrington Differential Hoist

Capacity Tons	Regular Lift Feet	Price of Hoist Regular Lift	Price of Extra Lift Per Foot	Distance Between Hooks		Weight of Hoist (Regular Lift) in Pounds	
				Shortest Inches	Reach (Reg. Lift) Feet—Inches	Net	Gross (Boxed)
1/4	6	18.00	2.80	17	7—5	24	35
1/2	7	21.00	2.80	21	8—9	33	43
1	8	28.00	3.00	26	10—2	60	66
1 1/2	8 1/2	36.00	3.20	32	11—2	86	106
2	9	45.00	3.40	39	12—3	130	162
3	10	60.00	4.00	44	13—8	177	222

Weston Differential Pulley Block

For ordinary use, where speed is not required and moderate price is desired, we recommend the Standard Weston Block as shown in Fig. 4760.

They hold the load at any given point and cannot run down. Lifting and lowering are effected by pulling opposite sides of the slack chain.

Weston Block, Fig. 4760

Direct Blocks Capacity Tons	Price With Regular Chain	*Extra Chain Per Foot	Regular Hoist Feet	Distance Between Hooks Inches	Net Weight Pounds
$\frac{1}{4}$	18.00	2.80	6	17	20
$\frac{1}{2}$	21.00	2.80	7	21	28
1	28.00	3.00	8	26	51
$1\frac{1}{2}$	36.00	3.20	$8\frac{1}{2}$	32	85
2	45.00	3.40	9	39	125
3	60.00	4.00	10	44	161

*Each foot of extra hoist includes 4 feet of chain.

Weston Geared Differential Pulley Block, Fig. 4761

Attention is directed to the superiority of the Geared Pulley Blocks over the so-called screw hoists. They are more powerful, will hold the load always, and are much lower in price. A man can raise 2000 to 5000 pounds

Chains in Block

Gear Blocks Capacity Tons	Price With Regular Chain	Load Feet	Hand Feet	Will Lift Feet	Weight Complete Pounds
2	40.00	24	18	9	125
3	46.00	26	20	10	168
4	53.00	28	22	11	227
5	73.00	30	24	12	289
6	95.00	32	26	13	371
8	115.00	36	28	14	504
10	163.00	40	30	15	683
12	310.00	42	32	16	1130

Reading Multiple Gear Chain Blocks Self-Lubricating

Obtains its power through a balanced train of spur gearing, which operates the main chain sheave, located between the two central frames of the block.

Efficiency, eighty per cent. Hoists freely and rapidly. Holds the load stationary at any point of the lift. Heaviest load may be lowered by a slight pull on the hand chain. Brake is adjustable, takes up its own wear and is absolutely safe. Casing is dust-proof and working parts operate in a bath of oil.

Fig. 4760
Weston Block

Capacity in Pounds	Price	Lift in Feet*	Price Per Foot Extra Lift	Net Weight Pounds	Shortest Distance Between Hooks Inches	Reach† Inches	Pull on Hand Chain to Lift Full Load Pounds	Chain Handled to Lift Load One Foot**
500	25.00	8	.85	40	12	9—0	40	20
1000	35.00	8	.90	60	14	9—2	50	27
2000	45.00	8	.95	94	16	9—4	78	32
3000	55.00	8	1.00	164	21	9—9	110	33
4000	70.00	9	1.05	230	23	10—11	150	36
4000 D.C.	70.00	9	1.05	130	21	10—9	80	64
5000	80.00	9	1.35	320	26	11—2	130	53
6000	90.00	10	1.25	215	28	12—4	120	66
8000	110.00	10	1.60	290	33	12—9	145	80
10000	135.00	12	2.00	420	36	15—0	135	105
12000	165.00	12	2.00	374	40	15—4	155	108
16000	200.00	12	2.75	480	45	15—9	160	158
20000	240.00	12	3.25	664	48	16—0	165	210
25000	300.00	12	4.00	800	60	17—0	170	260
30000	350.00	12	4.40	890	60	17—0	175	150 Ea.
40000	425.00	12	6.00	1375	60	17—0	180	160 Ea.

*Height to which block with regular length of chain will raise the load from the floor.

†"Reach" is extreme distance from hook to hook when block is fully extended.

**Figures give number of feet of hand chain which must be handled to lift the load one foot.

‡4000 size may be ordered single chain but unless specified the standard two speed will be shipped.

Special Quick-Speed Multiple Chain Blocks

Lift one half their capacity at twice the Speed Gear of the Standard Type

Capacity in Pounds	Regular Lift Feet	Price of Hoist Regular Lift	Price of Extra Lift Per Foot	Minimum Distance Between Hooks Inches	Weight of Hoist Pounds
500	8	30.00	.85	13	45
1000	8	35.00	.90	14	55
2000	8	45.00	.95	16	81



Fig. 4761
Geared Weston Block



Fig. 4762
Reading Chain Hoist



Fig. 4770

Standard Hoisting Rope—Swedish Iron

Composed of Six Strands and a Hemp Center, Nineteen Wires to the Strand

Trade Number	8	9	10	10 $\frac{1}{4}$	10 $\frac{1}{2}$	10 $\frac{3}{4}$	10a	10b	10c	10d
List Price, per foot	.26	.20	.16	.12	.10	.08 $\frac{1}{2}$	.07 $\frac{1}{2}$	.07	.06 $\frac{3}{4}$	.06 $\frac{1}{2}$
Diameter, inches	1	$\frac{7}{8}$	$\frac{3}{4}$	$\frac{5}{8}$	$\frac{9}{16}$	$\frac{1}{2}$	$\frac{7}{16}$	$\frac{3}{8}$	$\frac{5}{16}$	$\frac{1}{4}$
Approximate Circumference, inches	3	2 $\frac{3}{4}$	2 $\frac{1}{4}$	2	1 $\frac{3}{4}$	1 $\frac{1}{2}$	1 $\frac{1}{4}$	1 $\frac{1}{8}$	1	$\frac{3}{4}$
Approximate Weight, per foot	1.58	1.20	.89	.62	.50	.39	.30	.22	.15	.10
Approximate Strength in tons of 2000 pounds	14.5	11.8	8.5	6	4.7	3.9	2.9	2.4	1.5	1.1
Proper Working Load, Tons of 2000 pounds	2.90	2.36	1.70	1.20	.94	.78	.58	.48	.30	.22
Diameter Drum, Sheave Advised, feet	6	5 $\frac{1}{2}$	4 $\frac{1}{2}$	4	3 $\frac{1}{2}$	3	2 $\frac{3}{4}$	2 $\frac{1}{4}$	2	1 $\frac{1}{2}$

Standard Hoisting Rope—Cast Steel

Trade Number	8	9	10	10 $\frac{1}{4}$	10 $\frac{1}{2}$	10 $\frac{3}{4}$	10a	10b	10c	10d
List Price, per foot	.31	.24	.19	.14	.12	.11	.10	.09 $\frac{1}{2}$	.09 $\frac{1}{4}$	.09
Diameter, inches	1	$\frac{7}{8}$	$\frac{3}{4}$	$\frac{5}{8}$	$\frac{9}{16}$	$\frac{1}{2}$	$\frac{7}{16}$	$\frac{3}{8}$	$\frac{5}{16}$	$\frac{1}{4}$
Approximate Circumference, inches	3	2 $\frac{3}{4}$	2 $\frac{1}{4}$	2	1 $\frac{3}{4}$	1 $\frac{1}{2}$	1 $\frac{1}{4}$	1 $\frac{1}{8}$	1	$\frac{3}{4}$
Approximate Weight, per foot	1.58	1.20	.89	.62	.50	.39	.30	.22	.15	.10
Approximate Strength in tons of 2000 pounds	30	23	17.5	12.5	10	8.4	6.5	4.8	3.1	2.2
Proper Working Load, Tons of 2000 pounds	6	4.6	3.5	2.5	2	1.68	1.30	.96	.62	.44
Diameter Drum, Sheave Advised, feet	4	3 $\frac{1}{2}$	3	2 $\frac{1}{2}$	2 $\frac{1}{4}$	2	1 $\frac{3}{4}$	1 $\frac{1}{2}$	1 $\frac{1}{4}$	1

Tiller Rope

Composed of Six Ropes and a Hemp Center, Each Rope Consisting of Six Strands of Seven Wires Each and a Hemp Core

List Price, per foot, Iron	.33	.27	.22	.17	.14	.11 $\frac{1}{2}$	.10	.09	.08	.07 $\frac{1}{2}$
List Price, per foot, Cast Steel	.43	.36	.30	.24	.20	.17	.15	.14	.12 $\frac{1}{2}$	.11
Diameter, inches	1	$\frac{7}{8}$	$\frac{3}{4}$	$\frac{5}{8}$	$\frac{9}{16}$	$\frac{1}{2}$	$\frac{7}{16}$	$\frac{3}{8}$	$\frac{5}{16}$	$\frac{1}{4}$
Approximate Circumference, inches	3	2 $\frac{3}{4}$	2 $\frac{1}{4}$	2	1 $\frac{3}{4}$	1 $\frac{1}{2}$	1 $\frac{1}{4}$	1 $\frac{1}{8}$	1	$\frac{3}{4}$
Approximate Weight, per foot	1.10	.84	.62	.43	.35	.28	.21	.16	.11	.07

Galvanized Rigging and Guy Ropes

Composed of Six Strands and a Hemp Center, Seven Wires to the Strand

List Price, per foot	.15	.13	.11	.09	.08	.07	.06	.05	.04 $\frac{1}{2}$	.03 $\frac{1}{2}$
Diameter, inches	1	$\frac{7}{8}$	$\frac{3}{4}$	$\frac{5}{8}$	$\frac{9}{16}$	$\frac{1}{2}$	$\frac{7}{16}$	$\frac{3}{8}$	$\frac{5}{16}$	$\frac{1}{4}$
Approximate Circumference, inches	3	2 $\frac{3}{4}$	2 $\frac{1}{4}$	2	1 $\frac{3}{4}$	1 $\frac{1}{2}$	1 $\frac{1}{4}$	1 $\frac{1}{8}$	1	$\frac{3}{4}$
Approximate Weight, per foot	1.58	1.20	1.03	.89	.62	.50	.39	.30	.22	.15
Approximate Strength in Tons of 2000 pounds	14.1	11.1	9.4	7.8	5.7	4.46	3.39	2.35	1.95	1.42
Circumference of Equal Strength, Manila Rope	5 $\frac{3}{4}$	5 $\frac{1}{4}$	5	4 $\frac{3}{4}$	4 $\frac{1}{2}$	3 $\frac{3}{4}$	3	2 $\frac{1}{2}$	2 $\frac{1}{4}$	2

Five Strands

List Price, per foot, 7 Wires per Strand					.03	.02 $\frac{1}{2}$	.02 $\frac{1}{4}$	.02
Diameter, inches					$\frac{3}{32}$	$\frac{1}{4}$	$\frac{3}{32}$	$\frac{1}{16}$
Approximate Circumference, inches					$\frac{7}{8}$	$\frac{3}{4}$	$\frac{5}{8}$	$\frac{1}{2}$
Approximate Weight, per foot					.125	.09	.063	.04
Approximate Strength in Tons of 2000 pounds					1.20	.99	.79	.61
Circumference of Equal Strength, Manila Rope					1 $\frac{3}{4}$	1 $\frac{1}{2}$	1 $\frac{1}{4}$	1 $\frac{1}{8}$

Extra Pliable Hoisting Rope

Composed of Eight Strands and a Hemp Center, Nineteen Wires to the Strand—Cast Steel

List Price, per foot	.34	.27	.21	.16	.14	.12	.11	.10 $\frac{1}{2}$	.10
Diameter, inches	1	$\frac{7}{8}$	$\frac{3}{4}$	$\frac{5}{8}$	$\frac{9}{16}$	$\frac{1}{2}$	$\frac{7}{16}$	$\frac{3}{8}$	$\frac{5}{16}$
Approximate Circumference, inches	3	2 $\frac{3}{4}$	2 $\frac{1}{4}$	2	1 $\frac{3}{4}$	1 $\frac{1}{2}$	1 $\frac{1}{4}$	1 $\frac{1}{8}$	1
Approximate Weight, per foot	1.42	1.08	.80	.56	.45	.35	.27	.20	.13
Approximate Strength in Tons of 2000 pounds	26	20	15.3	10.9	8.7	7.3	5.7	4.2	2.75
Proper Working Load, Tons of 2000 pounds	5.2	4	3.06	2.18	1.74	1.46	1.14	.84	.55
Diameter Drum, Sheave Advised, feet	2.5	2.16	1.83	1.75	1.5	1.33	1.16	1	.83

Extra Pliable Hoisting Rope

Composed of Eight Strands and a Hemp Center, Nineteen Wires to the Strand—Plough Steel

List Price, per foot	.48	.38	.29	.21	.18	.16	.15	.14	.13 $\frac{1}{2}$	.13 $\frac{1}{4}$
Diameter, inches	1	$\frac{7}{8}$	$\frac{3}{4}$	$\frac{5}{8}$	$\frac{9}{16}$	$\frac{1}{2}$	$\frac{7}{16}$	$\frac{3}{8}$	$\frac{5}{16}$	$\frac{1}{4}$
Approximate Circumference, inches	3	2 $\frac{3}{4}$	2 $\frac{1}{4}$	2	1 $\frac{3}{4}$	1 $\frac{1}{2}$	1 $\frac{1}{4}$	1 $\frac{1}{8}$	1	$\frac{3}{4}$
Approximate Weight, per foot	1.42	1.08	.80	.56	.45	.35	.27	.20	.13	.09
Approximate Strength in Tons of 2000 pounds	33	26	20	14	11.6	8.7	6.90	5.12	3.35	2.25
Proper Working Load, Tons of 2000 pounds	6.6	5.2	4	2.8	2.32	1.74	1.38	1.02	.67	.45
Diameter Drum, Sheaves Advised, feet	2.5	2.16	1.83	1.75	1.50	1.33	1.16	1	.83	.75

Larger sizes quoted on specification or furnished at current prices. Wire Rope Fittings supplied where required.

Wire Rope Appliances

Cast Steel Switching Ropes—Single Forgings

Hook and thimble in one end; thimble and link in other end. List price for forgings only, to be added to price of rope. Double forgings have hook, thimble and link one end; thimble and two links in other end. List prices for forgings only—to be added to price of rope.

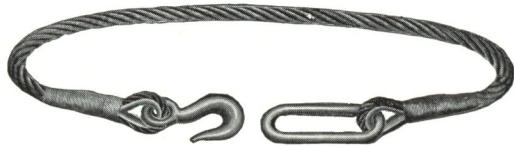


Fig. 4780. Single Forgings

Diameter.....	2	1 7/8	1 3/4	1 1/2	1 1/4	1 3/8	1 1/2	1 1/8	1	7/8	3/4
Single.....	36.00	32.00	25.00	21.25	17.25	13.25	10.00	9.50	7.00	6.75	4.00
Double.....	43.00	38.00	30.00	25.75	21.25	16.75	13.00	12.00	9.00	8.50	5.50

To carry same discount as Rope used in making up complete Switch Ropes.

Single and Double Forgings



Fig. 4781. Closed Socket

Closed and Open Sockets



Fig. 4782. Open Socket

Diameter Rope, inches.....	2 1/4	2	1 7/8	1 3/4	1 1/2	1 1/4	1 3/8	1 1/2	1 1/8	1	7/8	3/4
Circumference Rope, inches.....	7 7/8	6 3/4	5 3/4	5 1/2	5	4 3/4	4 1/4	4	3 3/4	3 1/2	3	2 3/4
Closed, Loose.....	26.00	24.00	17.50	16.00	10.00	9.00	6.50	6.00	4.00	3.50		
Closed, Fastened.....	37.00	33.50	27.00	24.00	16.00	14.00	10.75	9.50	6.85	5.55		
Open, Loose.....	37.00	34.00	24.00	22.00	12.50	11.50	8.50	8.00	5.00	4.50		
Open, Fastened.....	48.00	43.50	33.50	30.00	18.50	16.50	12.75	11.50	7.85	6.75		

Diameter Rope, inches.....	7/8	3/4	5/8	1/2	1/2	1/2	3/8	3/8	1/2	1/4
Circumference Rope, inches.....	2 3/8	2 1/4	2	1 1/2	1 1/2	1 1/2	1 1/4	1 1/4	1 1/4	1 1/4
Closed, Loose.....	2.50	1.80	1.35	1.10	1.00	.80	.75	.65	.60	.60
Closed, Fastened.....	4.50	3.30	2.65	2.35	2.15	1.95	1.75	1.55	1.50	1.50
Open, Loose.....	3.40	2.70	2.10	1.70	1.60	1.25	1.20	.90	.85	.85
Open, Fastened.....	5.40	4.20	3.40	2.95	2.75	2.40	2.20	1.80	1.75	1.75



Fig. 4783. Swivel Hook and Socket

Swivel Hook and Socket and Hook and Socket



Fig. 4784. Hook and Socket

Swivel Hook and Socket and Hook and Socket

Diameter Rope, inches.....	1 1/2	1 3/8	1 1/4	1 1/8	1	7/8	3/4
Circumference Rope, inches.....	4 3/4	4 1/4	4	3 3/4	3 1/2	3 1/4	3 1/4
Fig. 4783 For Steel Rope, Loose.....	27.00	21.00	17.00	12.00	8.35	7.00	5.25
Fig. 4783 For Steel Rope, Fastened.....	32.00	25.25	20.00	14.85	10.60	9.00	6.75
Fig. 4783 For Iron Rope, Loose.....	22.00	17.00	13.50	9.00	5.70	4.75	4.00
Fig. 4783 For Iron Rope, Fastened.....	27.00	21.25	17.00	11.85	7.95	6.75	5.50
Fig. 4784 For Steel Rope, Loose.....	14.50	12.30	10.00	8.25	6.50	5.25	3.85
Fig. 4784 For Steel Rope, Fastened.....	19.50	16.55	13.50	11.10	8.75	7.25	5.35
Fig. 4784 For Iron Rope, Loose.....	12.50	10.25	8.00	6.25	4.60	3.70	3.00
Fig. 4784 For Iron Rope, Fastened.....	17.50	14.50	11.50	9.10	6.85	5.70	4.50

Diameter Rope, inches.....	5/8	1/2	1/2	3/8	3/8	1/2	1/4
Circumference Rope, inches.....	2	1 3/4	1 1/2	1 1/4	1 1/4	1 1/4	1 1/4
Fig. 4783 For Steel Rope, Loose.....	4.60	3.75	3.55	2.85	2.70	2.30	2.30
Fig. 4783 For Steel Rope, Fastened.....	5.90	5.00	4.70	4.00	3.70	3.20	3.20
Fig. 4783 For Iron Rope, Loose.....	3.60	3.00	3.00	2.55	2.35	2.00	2.00
Fig. 4783 For Iron Rope, Fastened.....	4.90	4.25	4.15	3.70	3.35	2.90	2.90
Fig. 4784 For Steel Rope, Loose.....	2.90	2.45	2.10	1.70	1.65	1.45	1.45
Fig. 4784 For Steel Rope, Fastened.....	4.20	3.70	3.25	2.85	2.65	2.35	2.35
Fig. 4784 For Iron Rope, Loose.....	2.30	2.00	1.95	1.55	1.50	1.25	1.25
Fig. 4784 For Iron Rope, Fastened.....	3.60	3.25	3.10	2.70	2.50	2.15	2.15

Logging Swivel Hook and Socket, with Double Swivel

For Plough Steel Rope



Fig. 4785. Double Swivel

Diameter Rope, inches.....	1 1/2	1	7/8	3/4	5/8	1/2	3/8	3/8
Circumference Rope, inches.....	3 1/2	3	2 3/4	2 1/4	2	1 3/4	1 1/2	1 1/2
Fig. 4785, Loose.....	24.00	16.70	14.00	10.50	9.20	8.15	7.10	6.25
Fig. 4785, Fastened.....	26.85	18.95	16.00	12.00	10.50	9.35	8.25	7.35

For Iron and Cast Steel Rope

Diameter Rope, inches.....	1 1/2	1	7/8	3/4	5/8	1/2	3/8	3/8
Circumference Rope, inches.....	3 1/2	3	2 3/4	2 1/4	2	1 3/4	1 1/2	1 1/2
Fig. 4785, Loose.....	18.00	11.40	9.50	8.00	7.20	6.60	6.00	5.35
Fig. 4785, Fastened.....	20.85	13.65	11.50	9.50	8.50	7.85	7.15	6.45

Thimble Spliced on Rope

Diameter Rope, inches.....	1 1/2	1 3/8	1 1/4	1 1/8	1	7/8	3/4
Circumference Rope, inches.....	4 3/4	4 1/4	4	3 3/4	3	2 3/4	2 1/4
For Steel.....	6.50	5.75	4.70	3.90	3.00	2.55	2.00
For Iron.....	6.00	5.25	4.35	3.65	2.85	2.40	1.85



Fig. 4786. Thimble Spliced on Pipe

Diameter Rope, inches.....	5/8	1/2	1/2	3/8	3/8	1/2	1/4
Circumference Rope, inches.....	2	1 3/4	1 1/2	1 1/4	1 1/4	1 1/4	1 1/4
For Steel.....	1.55	1.30	1.25	1.20	1.15	1.10	1.10
For Iron.....	1.45	1.20	1.15	1.10	1.05	1.00	1.00

Heavy Galvanized Oval Thimbles

Width Score, inches.....	1 1/2	1 3/8	1 1/4	1 1/8	1	7/8	3/4
Circumference Rope, inches.....	4 3/4	4 1/4	4	3 3/4	3	2 3/4	2 1/4
Each.....	.50	.42	.33	.25	.20	.16	.15



Fig. 4787

Heavy Galvanized Oval Thimble

Width of Score, inches.....	5/8	1/2	1/2	3/8	3/8	1/2	1/4
Circumference of Rope, inches.....	2	1 3/4	1 1/2	1 1/4	1 1/4	1 1/4	1 1/4
Each.....	.13	.12	.11	.10	.09	.08	.08

Wire Rope Appliances



Fig. 4790. Hook and Thimble

Diameter Rope, inches.....	1 1/2	1 3/8	1 1/4	1 1/8	1	7/8	3/4	5/8	1/2	3/8	1/4
Circumference Rope, inches.....	4 3/4	4 1/4	4	3 1/2	3	2 3/4	2 1/4	2	1 3/4	1 1/2	1 1/8
For Steel, Loose.....	7.00	5.40	4.60	4.40	3.75	2.90	1.85	1.40	1.10	.80	.75
For Steel, Fastened.....	13.50	11.15	9.20	8.15	6.70	5.35	3.75	2.85	2.40	2.05	1.95
For Iron, Loose.....	5.00	3.40	2.65	2.40	1.90	1.40	1.10	.85	.75	.65	.60
For Iron, Fastened.....	11.00	8.65	6.90	5.90	4.65	3.70	2.85	2.20	1.95	1.80	1.70

Hook and Thimble

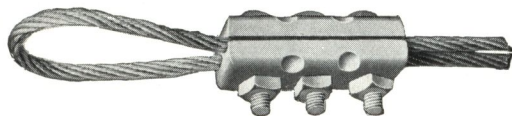


Fig. 4791. Extra Heavy Rope Clamp

Diameter Rope, inches.....	1 1/2	1 3/8	1 1/4	1 1/8	1	7/8	3/4	5/8	1/2	3/8	1/4
Circumference Rope, inches.....	4 3/4	4 1/4	4	3 1/2	3	2 3/4	2 1/4	2	1 3/4	1 1/2	1 1/8
For Steel, Loose.....	7.00	5.40	4.60	4.40	3.75	2.90	1.85	1.40	1.10	.80	.75
For Steel, Fastened.....	13.50	11.15	9.20	8.15	6.70	5.35	3.75	2.85	2.40	2.05	1.95
For Iron, Loose.....	5.00	3.40	2.65	2.40	1.90	1.40	1.10	.85	.75	.65	.60
For Iron, Fastened.....	11.00	8.65	6.90	5.90	4.65	3.70	2.85	2.20	1.95	1.80	1.70

Extra Heavy Wire Rope Clamp—Three-bolt, Painted

Diameter Rope, inches.....	2 3/4	2 1/2	2 1/4	2	1 3/4	1 1/2	1 1/4	1 1/8	1	3/4
Circumference Rope, inches.....	8 3/8	7 7/8	7 1/2	6 1/4	5 1/2	5	4 3/4	4 1/4	3 1/2	3
Price, each.....	16.50	15.00	13.75	8.50	5.50	5.50	3.80	3.80	2.50	1.90
Diameter Rope, inches.....	7/8	3/4	11/16	5/8	1/2	9/16	7/16	3/8	5/16	1/4
Circumference Rope, inches.....	2 3/4	2 1/4	2 1/8	2	1 3/4	1 1/2	1 1/4	1 1/8	1	3/4
Price, each.....	1.30	1.05	.90	.90	.60	.60	.45	.45	.30	.30



Fig. 4792. Clip

Drop-forged Wire Rope Clip, Galvanized

This Clip is light, durable and convenient and easily applied. Galvanized by a special process, which covers every part, including the threads, with a coating of zinc.

Fig. 4792 Clip

Diameter Rope, inches.....	2 1/2	2 1/4	2	1 3/4	1 1/2	1 1/4	1 1/8	1 1/4	1 1/8
Approximate Cir. Rope, inches.....	7 7/8	7 1/8	6 1/4	5 1/2	5	4 3/4	4 1/4	4	3 1/2
Price, each.....	11.50	9.50	7.50	5.50	5.50	1.50	1.25	1.10	.95
Diameter Rope, inches.....	1	7/8	3/4	5/8	1/2	7/16	3/8	5/16	1/4
Approximate Cir. Rope, inches.....	3	2 3/4	2 1/4	2	1 1/2	1 1/4	1 1/8	1	3/4
Price, each.....	.85	.75	.65	.55	60.	.45	.40	.35	.35

Crosby Wire Rope Clip

Diameter Rope, inches.....	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1
Circumference Rope, inches.....	3/4	1	1 1/8	1 1/4	1 1/2	2	2 1/4	2 3/4	3
Price, each.....	.35	.35	.40	.45	.45	.55	.65	.75	.85
Diameter Rope, inches.....	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	2	2 1/4	2 1/2
Circumference Rope, inches.....	3 1/2	4	4 1/4	4 3/4	5	5 1/2	6 1/4	7 1/8	7 7/8
Price, each.....	.95	1.10	1.25	1.50	3.50	5.50	7.50	9.50	11.50



Fig. 4794. Crosby Clip

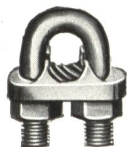


Fig. 4793. Clip

Diam. Rope, inches...	1/4	5/16	3/8	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8	1 1/2
Price, each.....	.25	.25	.25	.30	.35	.40	.45	.50	.60	.65	.70	.75

Bull Dog Clips—Black

Hoisting Sheaves For Wire Rope

Light Arm Supporting Sheaves, with Wide Grooves



Fig. 4795. Supporting Sheave



Fig. 4796. Light Iron Hoisting Sheave

Light Iron Hoisting Sheaves

Bored to Fit Shaft Each	Diameter at Bottom of Groove Inches	Diameter Over All Inches	Approximate Weight Pounds	Diameter of Largest Rope Fitting Groove Inch
8.00	30	32 1/2	90	1
5.00	24	26 3/4	60	1
3.00	18	20	35	7/8
2.50	16	17 3/4	25	3/4
2.25	14	15 3/4	23	3/4
1.75	12	14	17	3/4

In ordering Sheaves always state diameter of Sheave at bottom of groove.

Hoisting Sheaves for Wire Rope



Fig. 4800. Heavy Iron Hoisting Sheave

Heavy Iron Hoisting Sheaves

Trade Size	6-ft.	5-ft.	4-ft.	3-ft.	30-in.	27-in.	24-in.	21-in.	18-in.	15-in.
Diameter at Bottom of Groove, inches	70 $\frac{1}{4}$	58 $\frac{1}{2}$	46 $\frac{3}{4}$	35	29	26	23	20 $\frac{1}{8}$	17 $\frac{1}{8}$	14 $\frac{1}{4}$
Diameter Over All, inches	75 $\frac{3}{4}$	63 $\frac{1}{4}$	50 $\frac{3}{4}$	38	32	29	26	22 $\frac{7}{8}$	19 $\frac{7}{8}$	16 $\frac{3}{4}$
Approximate Weight, pounds	1100	800	480	240	140	125	110	80	65	50
Diam. Largest Rope for Groove, inches	1 $\frac{3}{4}$	1 $\frac{1}{2}$	1 $\frac{1}{4}$	1	1	1	1	$\frac{7}{8}$	$\frac{7}{8}$	$\frac{3}{4}$
Number of Arms	7	7	6	6	6	6	6	5	5	5
Price Bored to Fit Shaft	63.00	45.00	32.00	21.00	12.00	10.00	7.75	6.50	5.00	3.50

Solid Iron Sheaves for Derricks

(Not Illustrated)

	24	22	20	18	16	14	12	10	8
Diameter at Bottom of Groove, inches	24	22	20	18	16	14	12	10	8
Diameter Over All, inches	27	25	23	20 $\frac{1}{4}$	18 $\frac{1}{2}$	17	13 $\frac{1}{4}$	12 $\frac{1}{8}$	9 $\frac{3}{4}$
Approximate Weight, pounds	140	125	100	90	60	40	25	22	15
Diameter Largest Rope, inches	1	1	1	1	1	1	1	$\frac{3}{4}$	$\frac{9}{16}$
Bored to Fit Shaft, each	9.00	7.00	5.50	4.50	3.50	2.75	2.00	1.75	1.50

In ordering, state diameter of Sheave at bottom of groove.



Fig. 4801. Wood-lined Groove

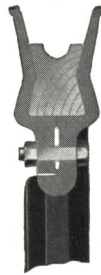


Fig. 4802. Power Transmission Sheave

Heavy Iron Hoisting Sheaves

With Wood-lined Grooves

	6	5	4	3	2
Diameter at Bottom of Groove, feet	6	5	4	3	2
Diameter Over All, inches	79 $\frac{3}{4}$	65 $\frac{1}{2}$	54 $\frac{1}{2}$	42 $\frac{1}{2}$	25 $\frac{1}{2}$
Approximate Weight, pounds	1300	1000	750	470	180
Diameter of Largest Rope, inches	1 $\frac{3}{4}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{4}$	1
Bored to Fit Shaft, each	130.00	90.00	60.00	45.00	25.00

In ordering, state diameter of Sheave at bottom of groove.

Power Transmission Sheaves

With Rubber and Leather-lined Grooves

	10	9	8	7	6	5
Diameter at Bottom of Groove, feet	10	9	8	7	6	5
Diameter Over All, inches	127	114 $\frac{1}{2}$	102	90 $\frac{3}{8}$	78	65
Approximate Weight, pounds	2400	1850	1350	1150	900	600
Diameter of Largest Rope, inches	1 $\frac{1}{4}$	1 $\frac{1}{4}$	1 $\frac{1}{4}$	1 $\frac{1}{4}$	1 $\frac{1}{4}$	1 $\frac{1}{8}$
Bored to Fit Shaft, each	*150.00	120.00	95.00	72.00	59.00	43.00
Diameter at Bottom of Groove, feet	4 $\frac{1}{2}$	4	3 $\frac{1}{2}$	3	2 $\frac{1}{2}$	1 $\frac{1}{2}$
Diameter Over All, inches	59	52	46	40	32	25 $\frac{3}{4}$
Approximate Weight, pounds	450	315	300	160	95	70
Diameter of Largest Rope, inches	1 $\frac{1}{8}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{5}{8}$	$\frac{5}{8}$
Bored to Fit Shaft, each	35.00	26.00	20.00	15.00	10.50	7.50

*Cast in halves. All others solid unless ordered split. Extra charge for splitting. In ordering always state diameter at bottom of groove.

Rope

Table Showing Approximate Length, Strength, Weight of Coils, etc., of Manila and Sisal Cordage

Full Coils 1200 Feet



Half Coils 600 Feet

Fig. 4810

Circumference Inches	Diameter Inches	Weight Per Coil Pounds	Weight Per Half Coil Pounds	Per Pound Feet	Strain Borne by New Manila Rope Pounds
$\frac{3}{8}$	$\frac{1}{8}$	30	15	60	460
$\frac{1}{2}$	$\frac{3}{16}$	35	18	50	550
$\frac{3}{4}$	$\frac{1}{4}$	45	23	40	620
1	$\frac{5}{16}$	50	25	30	1000
$1\frac{1}{8}$	$\frac{3}{8}$	55	28	24	1275
$1\frac{1}{4}$	$\frac{7}{16}$	65	33	20	1875
$1\frac{1}{2}$	$\frac{1}{2}$	85	43	14	2400
$1\frac{3}{4}$	$\frac{9}{16}$	120	60	10	3300
2	$\frac{5}{8}$	160	80	$7\frac{1}{2}$	4000
$2\frac{1}{4}$	$\frac{3}{4}$	200	100	6	4700
$2\frac{1}{2}$	$\frac{13}{16}$	240	120	5	5600
$2\frac{3}{4}$	$\frac{7}{8}$	300	150	4	6500
3	$1\frac{1}{16}$	350	175	$3\frac{1}{2}$	7500
$3\frac{1}{4}$	$1\frac{1}{8}$	420	210	$2\frac{7}{8}$	8900
$3\frac{1}{2}$	$1\frac{1}{4}$	480	240	$2\frac{1}{2}$	10500
$3\frac{3}{4}$	$1\frac{5}{16}$	560	280	$2\frac{1}{8}$	12500
4	$1\frac{3}{8}$	640	320	$1\frac{9}{10}$	14000
$4\frac{1}{4}$	$1\frac{7}{8}$	720	360	$1\frac{2}{3}$	15400
$4\frac{1}{2}$	$1\frac{1}{2}$	800	400	$1\frac{1}{2}$	16200
$4\frac{3}{4}$	$1\frac{5}{8}$	900	450	$1\frac{1}{3}$	17000
5	$1\frac{3}{4}$	1000	500	$1\frac{1}{5}$	20000
$5\frac{1}{2}$	$1\frac{7}{8}$	1200	600	1	25000
6	$1\frac{1}{2}$	1440	720	10 inches	27500
$6\frac{1}{4}$	2	1550	775	$9\frac{3}{10}$ inches	30000
$6\frac{1}{2}$	$2\frac{1}{8}$	1675	840	$8\frac{3}{5}$ inches	33000
7	$2\frac{1}{4}$	1950	975	$7\frac{3}{8}$ inches	37000
$7\frac{1}{2}$	$2\frac{3}{8}$	2240	1120	$6\frac{1}{2}$ inches	43000
8	$2\frac{9}{16}$	2540	1270	$5\frac{2}{3}$ inches	50000
$8\frac{1}{2}$	$2\frac{3}{4}$	2880	1440	5 inches	56000
9	$2\frac{7}{8}$	3200	1600	$4\frac{1}{2}$ inches	62000
$9\frac{1}{2}$	3	3600	1800	4 inches	68000
10	$3\frac{3}{16}$	4000	2000	$3\frac{3}{8}$ inches	75000
11	$3\frac{1}{2}$	4890	2445		
12	$3\frac{3}{4}$	5700	2850		
14	$4\frac{1}{2}$	7890	3945		
16	5	10440	5220		
18	$5\frac{3}{4}$	13620	6810		

Manila is about 25 per cent. stronger than Sisal

Manila Cordage

Regular Manila

$\frac{5}{8}$ -inch Diameter and Larger.....	basis
$\frac{9}{16}$, $\frac{1}{2}$, $\frac{7}{16}$	$\frac{1}{2}$ cent over basis
$\frac{3}{8}$	1 cent over basis
$\frac{5}{16}$, $\frac{1}{4}$	$1\frac{1}{2}$ cents over basis
$\frac{3}{16}$	2 cents over basis
$\frac{1}{8}$	$2\frac{1}{2}$ cents over basis

Hay or Bale Rope and Spun Yarn

Any Ply. Medium or Coarse.....	basis
Any Ply. Fine.....	$\frac{1}{2}$ cent over basis

If laid, $\frac{1}{2}$ cent extra. If unplied, 1 cent extra.

(Reels, coils single end, or coils stranded to cut many ends.)

All 4-strand rope 1 cent extra.

We can furnish any reasonable quantity of the above in staple sizes and lengths promptly.

Sisal Cordage

$\frac{5}{8}$ -inch diameter and larger.....	basis
$\frac{9}{16}$, $\frac{1}{2}$, $\frac{7}{16}$	$\frac{1}{2}$ cent over basis
$\frac{3}{8}$	1 cent over basis
$\frac{5}{16}$, $\frac{1}{4}$	$1\frac{1}{2}$ cents over basis
$\frac{3}{16}$	2 cents over basis
$\frac{1}{8}$	$2\frac{1}{2}$ cents over basis

Hay, Hide or Bale Rope

Any Ply. Medium or Coarse.....	basis
Any Ply. Fine.....	$\frac{1}{2}$ cent over basis
If laid, $\frac{1}{2}$ cent extra. If unplied, 1 cent extra.	
(Reels, coils single end, or coils stranded to cut many ends.)	

All 4-strand rope, 1 cent extra.

Lath Yarn

Medium (130), Coarse (110), Untarred.....	basis
Fine (200).....	$\frac{1}{2}$ cent over basis
If unplied, 1 cent extra.	
Medium (130), Coarse (110), Tarred.....	$\frac{1}{2}$ cent under basis
Fine (200) Tarred.....	basis

Tackle Blocks—Ash Shells

Fig. 4820
SingleFig. 4821
DoubleFig. 4822
TripleFig. 4823
Becket, SingleFig. 4824
Becket, DoubleFig. 4825
Becket, TripleInside Iron Strapped Block—Loose Hook
Common or Iron Bushed

						Extra Net List for Galvanizing Straps		
Sheave Inches	For Rope Inches	Shell Inches	Single Each	Double Each	Triple Each	Single Each	Double Each	Triple Each
1 3/4 x 1 1/4	1 1/8	3	.70	1.30	1.75	.04	.06	.10
2 x 1 1/2	1 3/8	3 1/2	.75	1.45	2.00	.04	.06	.10
2 1/4 x 1 3/4	1 1/2	4	.85	1.60	2.15	.05	.07	.11
3 x 2	1 5/8	5	.90	1.75	2.25	.06	.08	.12
3 1/2 x 2 1/4	1 3/4	6	1.10	2.00	2.90	.10	.12	.15
4 1/4 x 2 1/2	1 7/8	7	1.30	2.40	3.50	.12	.15	.18
4 3/4 x 2 3/4	1	8	1.65	2.85	4.25	.16	.21	.30
5 1/2 x 3 1/8	1 1/8	9	1.85	3.40	4.75	.22	.28	.38
6 1/2 x 3 1/4	1 1/4	10	2.75	4.50	6.25	.28	.38	.50
7 x 3 1/2	1 1/2	11	4.45	7.50	10.65	.35	.45	.60
8 x 3 3/4	1 3/4	12	4.45	7.50	10.65	.35	.45	.60
9 x 4	1 1/2	13	7.00	10.50	15.00	.55	.75	1.00
9 1/2 x 4 1/4	1 3/8	14	7.00	10.50	15.00	.55	.75	1.00
10 x 4 1/2	1 1/2	15	8.00	13.00	18.00	.75	.95	1.25
10 1/2 x 4 3/4	1 3/8	16	10.00	15.00	22.00	.85	1.20	1.50

Steel Tackle Blocks



Fig. 4826. Single



Fig. 4827. Double



Fig. 4828. Triple

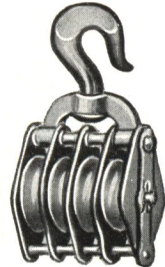


Fig. 4829. Four-fold

Steel Blocks—London Pattern

Single Blocks

Rope Size, inches.....	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4
Chain Size, inches.....	2 1/2	3 1/2	4	4 3/4	5	6	7	8	9	10	11	12
Diameter Sheave, inches.....	2 1/2	3 1/2	4	4 3/4	5	6	7	8	9	10	11	12
With Hook, each.....	1.65	2.00	2.20	2.75	3.45	4.15	5.50	7.45	10.50	18.70	27.50	33.00

Double Blocks

Rope Size, inches.....	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4
Chain Size, inches.....	2 1/2	3 1/2	4	4 3/4	5	6	7	8	9	10	11	12
Diameter Sheave, inches.....	2 1/2	3 1/2	4	4 3/4	5	6	7	8	9	10	11	12
With Hook, each.....	2.20	2.75	3.30	4.20	5.40	6.35	8.80	12.40	17.60	31.00	50.60	63.25

Triple Blocks

Rope Size, inches.....	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4
Chain Size, inches.....	2 1/2	3 1/2	4	4 3/4	5	6	7	8	9	10	11	12
Diameter Sheave, inches.....	2 1/2	3 1/2	4	4 3/4	5	6	7	8	9	10	11	12
With Hook, each.....	2.65	3.20	4.20	5.30	6.90	8.60	12.10	17.60	25.30	44.00	67.10	86.35
With Eye, each.....									20.35	28.00	43.00	55.60
With Shackles, each.....												

Four-fold Blocks

Rope Size, inches.....	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4
Chain Size, inches.....	2 1/2	3 1/2	4	4 3/4	5	6	7	8	9	10	11	12
Diameter Sheave, inches.....	2 1/2	3 1/2	4	4 3/4	5	6	7	8	9	10	11	12
With Hook, each.....	3.20	4.00	5.00	7.50	8.80	11.30	17.10	25.30	32.75	68.20	100.00	130.00
With Eye, each.....								25.30	30.25	35.20	53.40	68.20
With Shackle, each.....												

Shells and side straps of steel; hooks, rings and crossheads of wrought iron, forged. Pins are turned. Sheaves bored and polished. Eyes or shackles supplied on all heavy blocks.

Steel Tackle Blocks



Fig. 4830. Single



Fig. 4831. Double

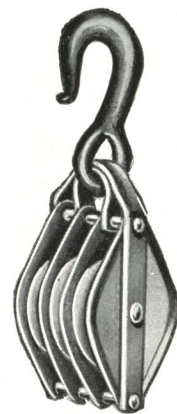
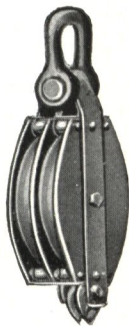
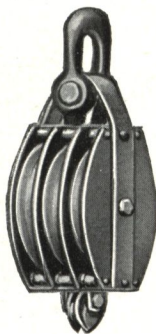


Fig. 4832. Triple

Dimensions			Iron Bushed			Roller Bushed		
Size Sheave Inches	For Diameter Rope Inches	Length Shell Inches	Single Each	Double Each	Triple Each	Single Each	Double Each	Triple Each
1 3/4 x 1 1/2 x 3/8	3/8	3	.70	1.30	1.75	1.10	2.00	2.90
2 1/4 x 5/8 x 3/8	1/2	4	.85	1.60	2.15	1.20	2.25	3.25
3 x 3/4 x 3/8	5/8	5	.90	1.75	2.25	1.25	2.35	3.50
3 1/2 x 1 x 1/2	3/4	6	1.10	2.00	2.90	1.50	2.85	4.40
4 1/4 x 1 x 1/2	7/8	7	1.30	2.40	3.50	1.70	3.35	5.00
4 3/4 x 1 1/8 x 5/8	1	8	1.65	2.85	4.25	2.25	4.15	6.00
6 1/4 x 1 1/4 x 5/8	1 1/8	10	2.75	4.50	6.25	3.50	6.00	8.50

Lighter than Wood Blocks and equally strong. As there is no danger of shells splitting, they are more durable. Forged steel hooks, straps, pins and shells. Straps extend full length of shell. Furnished Galvanized when so ordered.

Wire Rope Blocks

Fig. 4833. Single
With ShackleFig. 4834. Double
With ShackleFig. 4835. Triple
With ShackleFig. 4836. Diamond
Pattern, DoubleFig. 4837
Loose HookFig. 4838
Swivel HookWire Rope Blocks
Plain Iron Sheaves

Size of Sheave Inches	Single, Each	Double, Each	Triple, Each	Rope, Inches
10	14.00	20.00	28.00	3/8 and 1/2
12	16.00	23.00	31.00	1/2 and 5/8
14	18.00	25.00	36.00	5/8 and 3/4
16	31.00	40.00	46.00	3/4 and 7/8
18	34.50	45.00	60.00	7/8 and 1

Eight Hooks

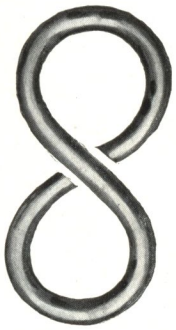


Fig. 4840
No. 1



Fig. 4841
No. 2



Fig. 4842
No. 3

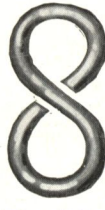


Fig. 4843
No. 4



Fig. 4844
No. 5



Fig. 4845
No. 6



Fig. 4846
No. 7

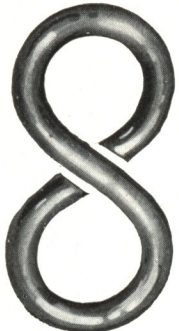


Fig. 4847
No. 1/2

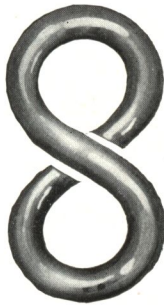


Fig. 4848
No. 1 1/2 Special

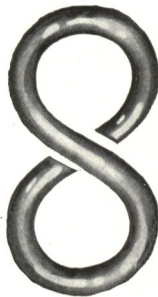


Fig. 4849
No. 1 1/2



Fig. 4849A
No. 2 1/2



Fig. 4849B
No. 3 1/2

Eight Hooks

No.	1	2	3	4	5	6	7	1/2	1 1/2S	1 1/2	2 1/2	3 1/2
Brass, per gross.....	2.25	1.80	1.50	1.30	1.10	.90	.85	3.25	3.00	2.75	2.00	1.50
Nickel-plated, per gross.....	2.40	1.95	1.60	1.40	1.20	1.00	.95	3.40	3.15	2.90	2.15	1.60

Proof Coil Chain—Straight Links

Also known as Ship and Cable Chain



Fig. 4849C. Straight Link Chain

Proof						B B					B B B				
Approximate						Approximate					Approximate				
Size Inches	Links per Foot	Outside Length Inches	Outside Width Inches	Weight per 100 Feet	Proof- Test	Links per Foot	Outside Length Inches	Outside Width Inches	Weight per 100 Feet	Proof- Test	Links per Foot	Outside Length Inches	Outside Width Inches	Weight per 100 Feet	Proof- Test
3/16	13	1 3/8	7/8	46	1000	14	1 1/4	3/4	50	1100	15	1 1/8	3/4	52	1200
1/4	12	1 1/2	1 1/16	75	1500	13	1 7/16	15/16	80	1650	14	1 3/8	15/16	83	1750
5/16	11	1 3/4	1 1/4	110	2600	12	1 1/8	1 1/8	115	3000	12 1/2	1 5/8	1 1/8	118	3400
3/8	10	2 1/8	1 1/2	155	3600	11	1 1/16	1 1/16	160	4000	11 1/2	1 7/8	1 7/16	166	4500
7/16	9	2 1/4	1 11/16	200	4500	9 1/2	2 3/16	1 9/16	210	5500	10	2 1/8	1 9/16	215	6300
1/2	8	2 1/2	1 7/8	260	6500	8 1/2	2 1/16	1 3/4	265	7000	9	2 3/8	1 3/4	268	8000
9/16	7 1/2	2 7/8	2 1/8	325	8000	8	2 13/16	2	335	8800	8 1/4	2 3/4	2	340	10000
5/8	6 1/2	3 1/8	2 1/4	400	9500	7	3 1/8	2 1/8	410	10750	7 1/4	3	2 1/8	420	12500
3/4	6	3 7/8	2 11/16	590	13500	6 1/4	3 5/8	2 9/16	600	15500	6 1/2	3 1/2	2 9/16	610	17750
7/8	5	4 3/8	3 1/8	800	18500	5 1/4	4 1/8	3	820	21000	5 1/2	4 1/16	3	830	24000
1	4	5	3 5/8	1000	24000	4 1/4	4 3/4	3 1/2	1030	28500	4 1/2	4 5/8	3 1/2	1040	31350
1 1/8	3 3/4	5 1/2	4	1300	29000	4	5 1/4	3 7/8	1350	36000	4 1/8	5 1/8	3 7/8	1400	38000
1 1/4	3 3/8	6 1/8	4 3/8	1500	39000	3 1/2	5 7/8	4 1/4	1550	43000	3 5/8	5 3/4	4 1/4	1600	47000

Approximate Break-test, double Proof-test. Working load, about one-half Proof-test.
Furnished at market prices.

Basin, Bath and Wash Tray Chains

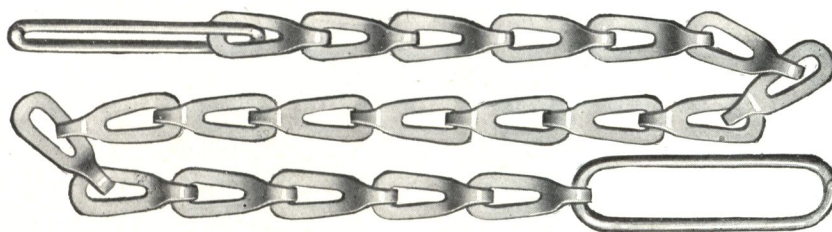


Fig. 4850. Chain with Snaps

Basin Chains with Snaps

		Brass	Nickel-plated
No. 00	Length 16½ inches, per dozen.....	1.00	1.05
No. 0	Length 16½ inches, per dozen.....	1.20	1.25
No. 1	Length 16½ inches, per dozen.....	1.40	1.45

Bath Tub Chains with Snaps

		Brass	Nickel-plated
No. 00	Length 26¼ inches, per dozen.....	1.40	1.47
No. 0	Length 26¼ inches, per dozen.....	1.65	1.72
No. 1	Length 26¼ inches, per dozen.....	2.00	2.07
No. 2	Length 26¼ inches, per dozen.....	2.45	2.52

Tray Chains with Snaps

		Brass	Nickel-plated
No. 00	Length 19¾ inches, per dozen.....	1.15	1.21
No. 0	Length 19¾ inches, per dozen.....	1.35	1.41
No. 1	Length 19¾ inches, per dozen.....	1.60	1.66
No. 2	Length 19¾ inches, per dozen.....	1.95	2.01

German Silver Bath and Basin Chain

This is a Special Round Link Chain designed for use with the highest grade fixtures. The links are closed with jewelers solder and the chains are lacquered, making a strong, artistic trimming for any fixture. Illustration is actual size of chain



Fig. 4851. German Silver Bath and Basin Chain

Price per Foot..... .30

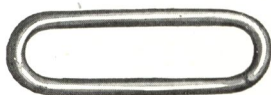


Fig. 4852. Split Link

Split Links

	Brass	Nickel-plated
Small, per gross.....	1.50	1.60
Large, per gross.....	1.75	1.85

Cable Chains

(Actual size)


Fig. 4853
No. 110

Fig. 4854
No. 10

Fig. 4855
No. 30

Fig. 4856
No. 40

Fig. 4857
No. 75

Price List

		Steel, List	Copper, List
No. 110	For sash weighing 400 pounds, per foot.....	.17	.23
No. 10	For sash weighing 250 pounds, per foot.....	.14	.17
No. 30	For sash weighing 125 pounds, per foot.....	.10	.12
No. 40	For sash weighing 75 pounds, per foot.....	.09	.11
No. 75	Brass Bell Hangers' Chain, per foot.....		.25
No. 75	Steel Bell Hangers' Chain, per foot.....		.08

Cable Chains

(Actual size)

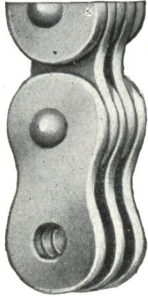


Fig. 4860. Steel
No. 6

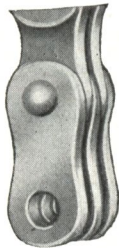


Fig. 4861. Steel
No. 60

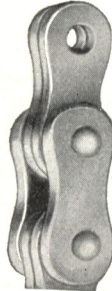


Fig. 4862. Steel
No. 50



Fig. 4863
Brass Steamboat

Price List

No. 6	Tensile strength 2500 pounds, price per foot.....	.35
No. 60	Tensile strength 2000 pounds, price per foot.....	.25
No. 50	Tensile strength 1600 pounds, price per foot.....	.22
Brass Steamboat Chain,	price per foot.....	.38

Tensile strength given is a perfectly safe limit.

Brass and Iron Jack Chains

Single

Double



Fig. 4864
No. 10



Fig. 4865
No. 14



Fig. 4866
No. 18



Fig. 4867
No. 24



Fig. 4868
No. 24



Fig. 4869
No. 20



Fig. 4869A
No. 18



Fig. 4869B
No. 15

Brass and Iron Jack Chains

List Price Per Box of Twelve Yards

Single			Double			No.	Extra for Nickel, Brass and Copper Plating, Single and Double Chain Per Dozen Yards, Net
No.	Iron	Brass	No.	Iron	Brass		
6	1.30	8.00	..	....	....	6	.20
7	1.10	6.35	..	....	....	7	.19
8	.95	5.25	..	....	....	8	.17
9	.90	4.25	..	....	....	9	.16
10	.80	3.50	10	.95	4.75	10	.14
11	.70	2.80	11	.85	3.77	11	.13
12	.65	2.30	12	.72	3.20	12	.10
13	.60	1.92	13	.65	2.50	13	.09
14	.55	1.60	14	.60	2.05	14	.07
15	.50	1.25	15	.58	1.60	15	.06
16	.48	1.00	16	.53	1.32	16	.05
17	.48	.84	17	.51	1.10	17	.05
18	.45	.70	18	.48	.90	18	.05
19	.40	.60	19	.45	.76	19	.05
20	.40	.55	20	.45	.72	20	.05
21	.40	.50	21	.45	.70	21	.05
22	.40	.50	22	.45	.70	22	.05
23	.40	.50	23	.45	.70	23	.05
24	.40	.50	24	.45	.70	24	.05

Sash Chains



Fig. 4870. Sash Chains

No.	A	1	2	0
Phosphor Bronze, per foot.....	.15	.12	.10	.08
For Sash Weighing Not Over, pounds.....	400	275	175	125
Red Bronze, per foot.....	.13	.10	.08	.06
For Sash Weighing Not Over, pounds.....	300	225	150	100
Steel, Plain or Coppered, per foot.....	.11	.08	.06	.04
For Sash Weighing Not Over, pounds.....	400	250	150	100
Steel, Sherardized or Galvanized, per foot.....	.12	.09	.07	.05
For Sash Weighing Not Over, pounds.....	400	250	150	100

XXXX Sash Chains

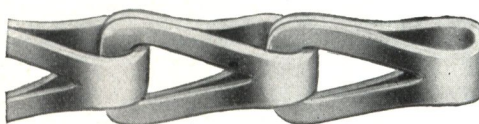


Fig. 4871. XXXX Sash Chain

Phosphor Bronze, Sash Weighing Not Over 450 Pounds, per foot.....	.52
Red Bronze, Sash Weighing Not Over 450 Pounds, per foot.....	.45
Brass, per foot.....	.45
Steel, Sash Weighing Not Over 400 Pounds.....	.15

A A Chains



Fig. 4872. A A Chain

Red Metal (Bronze Mixture) Tensile Strength 900 Pounds, per foot.....	.17 1/4
Steel, Tensile Strength 750 Pounds, per foot.....	.05

Plumbers' Chains



Fig. 4873. Plumbers' Links



Fig. 4874. Safety Links



Fig. 4875. Navy Links

Plumbers' Chains on 500 Foot Reels

List Prices Per 100 Feet

Style Chain	Size No.	Brass	N. P.
Safety Links.....	000	3.50	3.60
Plumbers' or Safety Links.....	00	4.00	4.10
Plumbers' or Safety Links.....	0	5.00	5.10
Plumbers' or Safety Links.....	1	6.25	6.35
Plumbers' or Safety Links.....	2	8.00	8.20
Navy Links.....	3	10.00	10.20
Navy Links.....	4	11.50	11.70

List Prices in Boxes of 12 Yards

Style Chain	Size No.	Brass	N. P.
Safety Links.....	000	1.25	1.30
Plumbers' Safety Links.....	00	1.45	1.50
Plumbers' Safety Links.....	0	1.80	1.85
Plumbers' Safety Links.....	1	2.25	2.30
Plumbers' Safety Links.....	2	2.90	3.00
Navy Links.....	3	3.60	3.70
Navy Links.....	4	4.15	4.25

No. 00. Aluminum Safety Links, per 100 feet.....3.70

Wrought Iron Turnbuckles

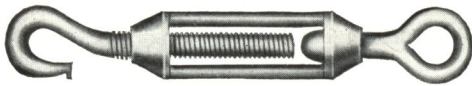


Fig. 4880. With Hook and Eye

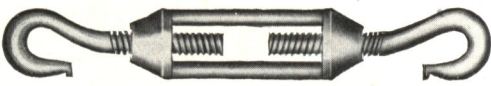


Fig. 4881. With Two Hooks

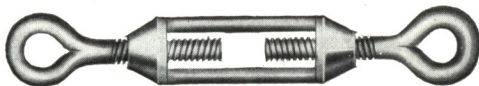


Fig. 4882. With Two Eyes

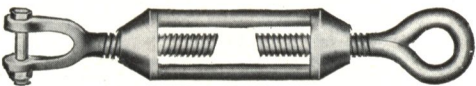


Fig. 4883. With Eye and Shackle

Wrought Iron Turnbuckles

Outside Diam. of Screw Inch	Length in Clear Between Heads Inches	Price, Each		Outside Diam. of Screw Inches	Length in Clear Between Heads Inches	Price, Each	
		Galvanized	Plain			Galvanized	Plain
$\frac{3}{16}$	$3\frac{1}{2}$	.95	.80	1	$11\frac{1}{4}$	5.50	4.25
$\frac{1}{4}$	$3\frac{3}{4}$	1.00	.85	$1\frac{1}{8}$	$12\frac{1}{4}$	7.00	5.25
$\frac{5}{16}$	$4\frac{1}{4}$	1.10	.90	$1\frac{1}{4}$	$13\frac{1}{4}$	8.25	6.25
$\frac{3}{8}$	$4\frac{3}{4}$	1.30	1.10	$1\frac{3}{8}$	$14\frac{1}{2}$	9.50	7.50
$\frac{7}{16}$	$5\frac{1}{2}$	1.50	1.25	$1\frac{1}{2}$	15	11.00	9.00
$\frac{1}{2}$	6	1.80	1.55	$1\frac{5}{8}$	16	15.00	13.00
$\frac{9}{16}$	6	2.10	1.85	$1\frac{3}{4}$	18	20.00	17.00
$\frac{5}{8}$	6	2.40	2.00	$1\frac{7}{8}$	18	25.00	22.00
$\frac{3}{4}$	9	3.50	2.75	2	24	28.00	25.00
$\frac{7}{8}$	10	4.25	3.50	...	....	.....	.....

Brass Turnbuckles

With Two Eyes

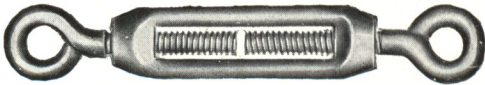


Fig. 4884. Brass Turnbuckle

No.....	1	2	3	4	5
Whole Length Screwed Up, inches.....	$2\frac{1}{4}$	3	$3\frac{1}{2}$	$4\frac{1}{4}$	5
Screw Opens, inches.....	$\frac{3}{4}$	$1\frac{1}{8}$	$1\frac{1}{2}$	$1\frac{3}{4}$	$2\frac{1}{4}$
Price, per dozen.....	3.00	3.60	5.50	7.25	10.00

Drop-Forged Turnbuckles

Swivel on One End, Right-hand Thread on the Other

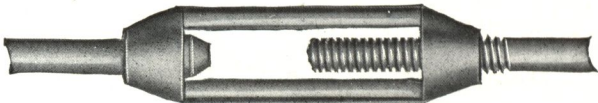


Fig. 4885. Drop-Forged Turnbuckle

Illustration shows a Drop-Forged Turnbuckle with swivel on one end and right-hand thread on the other end. They can also be furnished with right-hand thread on one end and left-hand thread on the other end, and can be furnished any size stub end and any size middle. List prices same as Fig. 4890.

Turnbuckles

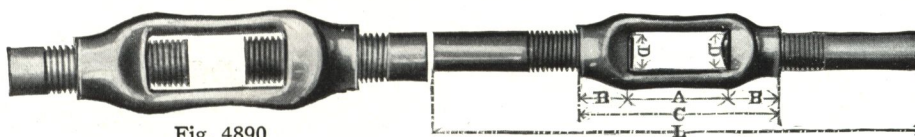


Fig. 4890

With Right and Left Stub Bolt Ends

Dimensions

Turnbuckles

Size, inches.....	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$
Length of Buckle, inches.....	$7\frac{1}{8}$	$7\frac{1}{16}$	$7\frac{1}{2}$	$7\frac{11}{16}$	$7\frac{7}{8}$	$8\frac{1}{4}$	$8\frac{5}{8}$	9	$9\frac{3}{8}$
Price, each.....	.40	.42	.45	.48	.50	.63	.75	.88	1.00
Size, inches.....	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$	$1\frac{5}{8}$	$1\frac{3}{4}$	$1\frac{7}{8}$	2	$2\frac{1}{8}$	$2\frac{1}{4}$
Length of Buckle, inches.....	$9\frac{3}{4}$	$10\frac{1}{8}$	$10\frac{1}{2}$	$10\frac{7}{8}$	$11\frac{1}{4}$	$11\frac{5}{8}$	12	$12\frac{3}{8}$	$12\frac{3}{4}$
Price, each.....	1.25	1.38	1.50	1.75	2.00	2.25	2.65	3.10	3.50
Size, inches.....	$2\frac{3}{8}$	$2\frac{1}{2}$	$2\frac{5}{8}$	$2\frac{3}{4}$	$2\frac{7}{8}$	3	$3\frac{1}{8}$	$3\frac{1}{4}$	$3\frac{3}{8}$
Length of Buckle, inches.....	$13\frac{1}{8}$	$13\frac{1}{2}$	$13\frac{7}{8}$	$14\frac{1}{4}$	$14\frac{5}{8}$	15	$15\frac{3}{8}$	$15\frac{3}{4}$	$16\frac{1}{8}$
Price, each.....	4.00	4.50	5.00	5.50	6.00	6.50	7.50	8.00	9.00
Size, inches.....			$3\frac{1}{2}$	$3\frac{3}{4}$	4	$4\frac{1}{4}$	$4\frac{1}{2}$	$4\frac{3}{4}$	5
Length of Buckle, inches.....			$16\frac{1}{2}$	$17\frac{1}{4}$	18	$21\frac{1}{2}$	$22\frac{1}{2}$	$23\frac{1}{2}$	24
Price, each.....			10.00	15.00	20.00	34.00	44.00	56.00	70.00

Over 4 inches not made in first length.

Above prices are for first on standard length turnbuckle, viz: 6 inches clear between heads.

Turnbuckles 9 inches in the clear between heads, add 25 per cent. to above prices.

Turnbuckles 12 inches in the clear between heads, add 50 per cent. to above prices.

Turnbuckles 15 inches in the clear between heads, add 100 per cent. to above prices.

Turnbuckles 18 inches in the clear between heads, add 150 per cent. to above prices.

Turnbuckles 24 inches in the clear between heads, three and one-half times above prices.

Turnbuckles 36 inches in the clear between heads, four times above prices.

Turnbuckles 48 inches in the clear between heads, six times above prices.

Turnbuckles 72 inches in the clear between heads, eight times above prices.

Dimensions

Size, inches.....	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$
Length (L), inches.....	22	22	22	22	22	23	24	25	25	26
Size, inches.....	$1\frac{3}{8}$	$1\frac{1}{2}$	$1\frac{5}{8}$	$1\frac{3}{4}$	$1\frac{7}{8}$	2	$2\frac{1}{8}$	$2\frac{1}{4}$	$2\frac{3}{8}$	$2\frac{1}{2}$
Length (L), inches.....	27	27	28	28	29	29	29	30	31	32
Size, inches.....	$2\frac{5}{8}$	$2\frac{3}{4}$	$2\frac{7}{8}$	3	$3\frac{1}{8}$	$3\frac{1}{4}$	$3\frac{3}{8}$	$3\frac{1}{2}$	$3\frac{3}{4}$	4
Length (L), inches.....	32	33	33	34	36	36	37	37	39	41

L-A Length of Two Stub Ends

The size of the buckle is the outside diameter of the screw, same as bolts, nuts, etc.

Standard length, 6 inches between heads (A) for all sizes.

Second length, 9 inches between heads (A) for all sizes.

Third length, 12 inches between heads (A) for all sizes.

Fourth length, 15 inches between heads (A) for all sizes.

Fifth length, 18 inches between heads (A) for all sizes.

Sixth length, 24 inches between heads (A) for all sizes.

Seventh length, 36 inches between heads (A) for all sizes.

Eighth length, 48 inches between heads (A) for all sizes.

Ninth length, 72 inches between heads (A) for all sizes.

Galvanized Pipe Turnbuckles

With Eye and Shackle



Fig. 4891

These pipe turnbuckles can also be furnished with eye and eye, hook and eye, hook and hook, shackle and hook or shackle and shackle.

Outside Diameter of Screw, inches.....	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$
Length of Pipe, inches.....	$5\frac{1}{2}$	$5\frac{3}{4}$	$6\frac{1}{2}$	$6\frac{3}{4}$	8	$9\frac{1}{4}$	$10\frac{3}{4}$	12	13	15	16	16
Price, each.....	1.00	1.10	1.30	1.50	1.80	2.10	2.40	3.50	4.25	5.50	7.00	8.25

Nason Tubular Steel Barrows

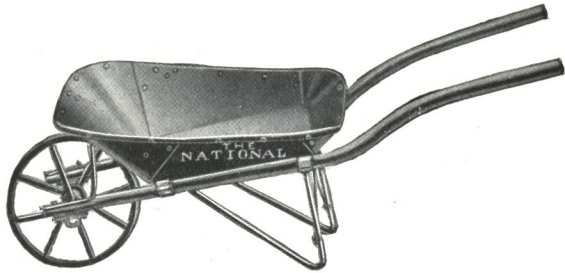


Fig. 4900. Ideal No. 4

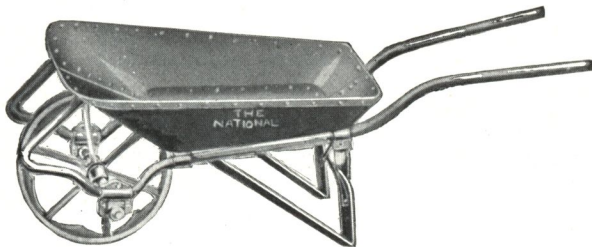


Fig. 4901. Foundry Barrow



Fig. 4902. Coal Barrow



Fig. 4903. Square Tray Coal Barrow



Fig. 4904. Coal Barrow

Ideal Steel Barrow

Of approved shape, made of best grade steel and has a strong band iron riveted around to stiffen it. Special attention has been paid to bracing these barrows, with a view to increased strength. Wheels are malleable iron and handles are attached to tray with patent clips.

Width of tray, 29 inches; length of tray, 32 inches; capacity, 3 cubic feet; 15-inch wheel, tray of No. 16 Steel.

No. 4, each..... 10.00

Foundry Barrow

Having Thicker Bottoms than Sides

No.....	4-A	5-A	6-A	7-A	8-A
Tray.....	29x32	31x36	32x38	36x39	40x45
Wheel.....	16	16	16	16	16
Cubic Feet.....	3	4	4½	5½	7½
Each.....	14.00	15.00	16.50	20.00	22.00

No.....	4-AA	5-AA	6-AA	7-AA	8-AA
Tray.....	29x32	31x36	32x38	36x39	40x45
Wheel.....	16	16	16	16	16
Cubic Feet.....	3	4	4½	5½	7½
Each.....	15.00	16.00	17.50	21.00	23.00

4-A to 8-A, Nos. 12 and 10 Steel

4-AA to 8-AA, Nos. 12 and 8 Steel.

Steel Coal Barrow

With thicker bottoms than sides. Adapted for forward dumping and especially for coal and ashes.

No.....	4	5	6	7	8
Tray.....	29x32	31x36	32x38	36x39	40x45
Wheel.....	16	16	16	16	16
Pounds Coal.....	150	200	225	300	450
Each.....	12.25	14.25	15.00	18.00	20.00

Gauge, All Nos. 16 and 12 Steel

Coal Barrow—Square Tray

No.....	9	10	11	12	13
Tray.....	32x34	33x36	35x38	36x40	38x42
Wheel.....	18	18	18	18	18
Pounds Coal.....	260	340	400	480	600
Each.....	22.00	24.00	26.00	28.00	30.00

Gauge, All Nos. 14 and 10 Steel

Also made in "A" Grade of Nos. 12 and 10, and "AA" Grade of Nos. 12 and 8 Steel. Style, sizes and capacity as above.

No.....	9-A	10-A	11-A	12-A	13-A
Each.....	23.50	25.50	27.50	29.75	32.00

No.....	9-AA	10-AA	11-AA	12-AA	13-AA
Each.....	24.50	26.75	28.50	30.75	33.50

No. 39 Coal Barrow

This barrow is carefully constructed. Tray is made of one sheet of steel with heavy band around the top to reinforce it. Handles are one continuous piece of pipe passing around the front of the wheel, which is heavy pattern malleable iron, fitted with 1½ steel axle.

Length of tray, 41½ inches; width of tray, 34½ inches; capacity, 6 cubic feet (300 pounds of coal).

Price, each..... 17.00

Nason Tubular Steel Barrows

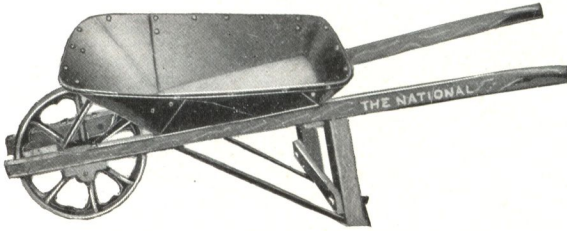


Fig. 4910. Sand or Mortar Barrow

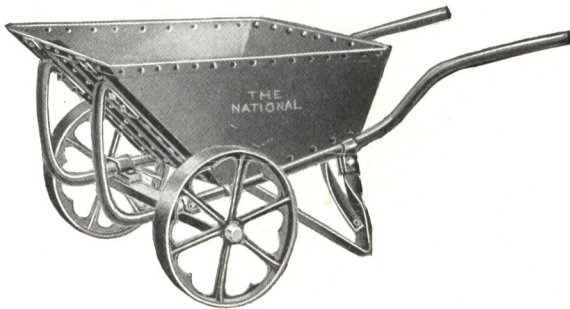


Fig. 4912. Square Tray, Two Wheels

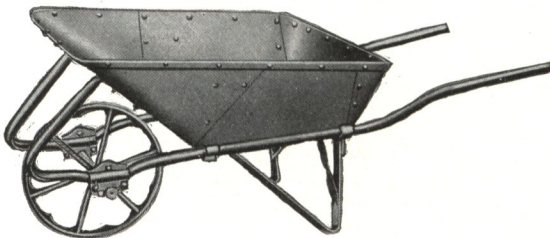


Fig. 4913. Apartment House Barrow



Fig. 4914. Charging Barrow

Steel Coal Cart—Fig. 4915

These Carts are made of sheet steel, strongly riveted, with two stationary and one swivel wheel. The wheels can be furnished with or without rubber tires.

No. 1	Body 24 ins. long, 20 ins. wide, 18 ins. deep, each.....	40.00
No. 2	Body 36 ins. long, 24 ins. wide, 20 ins. deep, each.....	42.50
No. 3	Body 36 ins. long, 24 ins. wide, 24 ins. deep, each.....	45.00
No. 4	Body 42 ins. long, 24 ins. wide, 24 ins. deep, each.....	50.00

Sand or Mortar Barrow

Steel tray, wood frame, especially adapted for wheeling mortar and sand. Not quite as strong as our steel barrows, but they will serve the same purpose and are lower in price. Trays and wheels are same as used in our Ideal, and are well braced and perfectly balanced.

No. 4	3 Cubic Feet, each.....	7.25
No. 5	4 Cubic Feet, each.....	8.50

Coal Barrows—Square Tray

With Two Wheels

Barrows No. 4 to 13 on preceding page can be furnished with two wheels. The following lists contain the sizes usually made in this way. Sizes and capacities correspond with the original numbers.

No.....	9½	10½	11½	12½	13½
Pounds Coal....	260	340	400	480	600
Each.....	28.00	30.00	32.00	34.00	38.00
No.....	9½A	10½A	11½A	12½A	13½A
Pounds Coal....	260	340	400	480	600
Each.....	29.50	31.50	33.50	35.75	40.00
No.....	9½AA	10½AA	11½AA	12½AA	13½AA
Pounds Coal....	260	340	400	480	600
Each.....	30.50	32.75	34.50	36.75	42.00

Apartment House Coal Barrow

Especially designed to meet the demand for a coal barrow which would pass through a narrow passageway. Also desirable for apartment house use, going through narrow doorways, and on board vessels where large loads of coal must be wheeled.

Width of tray, 24 inches; length of tray, 37 inches; diameter of wheel, 16 inches; pounds of coal, 250.

Each.....	23.50
-----------	-------

Tray No. 16 Steel.

Charging Barrow—Fig. 4914

For Coal or Coke

No.	Each	Cubic Feet	Pounds Coal	Bottom No.	Sides No.
1	40.00	8	400	12	14
2	45.00	10	500	12	14
3	47.50	12	600	12	14
4	50.00	16	800	10	12
5	52.50	20	1000	10	12



Fig. 4915. Steel Coal Cart



Fig. 4920. Tubular Barrow

Tubular Steel Wheel-barrow

Flat steel legs. Trays pressed from a single sheet, without seams, welding or rivets

No.	Length on Top Inches	Width on Top Inches	Depth at Wheel Inches	Depth at Handle Inches	Capacity		
					Cubic Feet	Pounds Coal	Each
X234	33	28	7	4½	3	150	16.20
X244	35½	28½	8½	6	4	225	17.10
X263	41½	33	11½	8	6	300	22.70
X265	41½	33	11½	8	6	...	20.00

Note: No. X265 is light construction, designed for carrying coke and ashes.

Barrow Trays

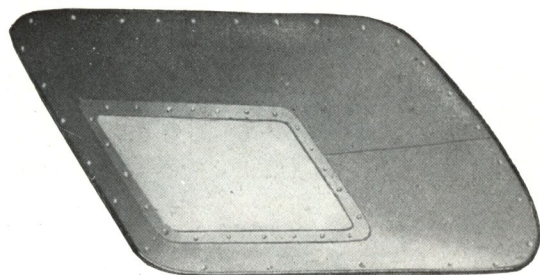


Fig. 4921. Coal and Foundry Barrow Trays With Thicker Bottoms than Sides

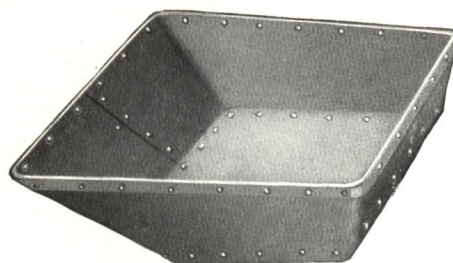


Fig. 4922. Square Barrow Trays With Thicker Bottoms than Sides

Barrow Trays—Fig. 4921

For Barrow No.	4	5	6	7	8
Each.....	5.25	6.00	7.00	8.00	9.00
For Barrow No.	4A	5A	6A	7A	8A
Each.....	6.00	7.50	8.00	9.50	10.50
For Barrow No.	4AA	5AA	6AA	7AA	8AA
Each.....	7.50	8.75	9.50	10.75	11.75

Square Trays—Fig. 4922

For Barrow No.	9	10	11	12	13
Each.....	9.00	9.75	10.50	11.00	13.00
For Barrow No.	9A	10A	11A	12A	13A
Each.....	10.50	11.00	11.75	12.50	14.50
For Barrow No.	9AA	10AA	11AA	12AA	13AA
Each.....	11.75	12.50	13.00	13.75	15.50
Tray for No. 39 Coal Barrow, each.....					6.00
Tray for Apartment House Barrow, each.....					9.00

Malleable Iron Barrow Wheels



Fig. 4923. Malleable Iron Barrow Wheel

Diameter, Inches	Width of Tire Inches	Diameter of Axle Inches	Each
15	1½	1⅛	2.25
16	2	1⅛	3.25
18	2	1⅛	4.00
20	2	...	5.25
24	2¼	...	6.50
28	2½	...	9.00

Wagon Chute, Fig. 4924

Tapered, 5 feet long, with folding legs and window stop; 24 inches wide at large end, 15 inches at small end. Designed for use where it is not practicable to use a taper or telescope chute.

Each..... 6.00

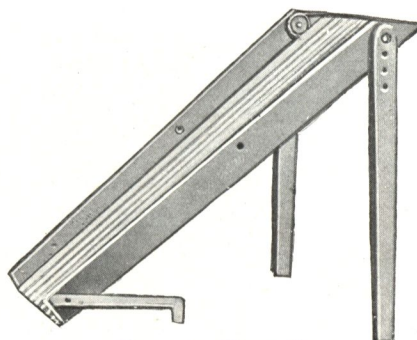


Fig. 4924. Wagon Chute

Steel Coal Chutes

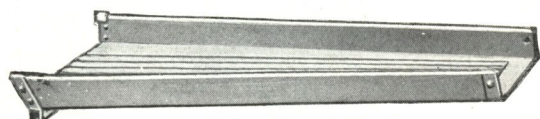


Fig. 4925. Tapered Chute

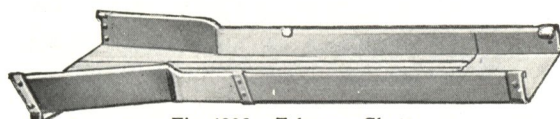
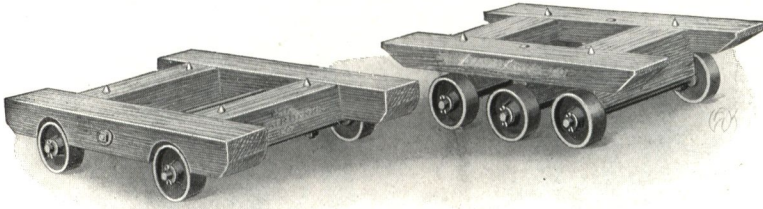


Fig. 4926. Telescope Chute

Length, feet.....	8	9	10	11	12	13	14	15	16	17	18	19	20
Tapered, each.....	6.50	7.00	8.00	9.00	10.00	13.00	14.00	15.00	16.00	17.00	18.00	19.00	20.00
Telescope, each.....			10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00	18.00	19.00	20.00

Box or Case Trucks

Fig. 4930
No. 223, Four WheelsFig. 4931
No. 224, Six Wheels

Designed for handling heavy, bulky cases and bales. Very convenient for many conditions. Construction is low and exceedingly strong.

Wheels are set flush with sides of truck and in No. 223 Trucks are set into routings on the side rails, greatly reducing the over-all height. Tops of frames are equipped with spurs to prevent load from slipping.

No.	223-1	223-2	224-3	224-4
Length, inches	18	26	24	36
Width, inches	18	18	16	22
Height, inches	5	5	6 $\frac{1}{2}$	6 $\frac{1}{2}$
Rails, inches	3 $\frac{1}{2}$ x 2 $\frac{3}{4}$	3 $\frac{1}{2}$ x 2 $\frac{3}{4}$	4 x 1 $\frac{3}{4}$	4 x 1 $\frac{3}{4}$
Wheels, inches	3 $\frac{7}{8}$ x 1 $\frac{3}{8}$	3 $\frac{7}{8}$ x 1 $\frac{3}{8}$	3 $\frac{7}{8}$ x 1 $\frac{3}{8}$	3 $\frac{7}{8}$ x 1 $\frac{3}{8}$
Axles (Square), inches	3 $\frac{3}{4}$	3 $\frac{3}{4}$	3 $\frac{3}{4}$	4 $\frac{3}{4}$
Weight, pounds	27	31	34	47
No. 223 or No. 224, each	8.20	8.65	9.05	10.45

All Malleable Iron Case Trucks

These Trucks are unequalled for strength and durability, combined with lightness in weight, and are practically indestructible.

Fig. 4933 has a capacity of one ton and Fig. 4932 one and one-half tons.

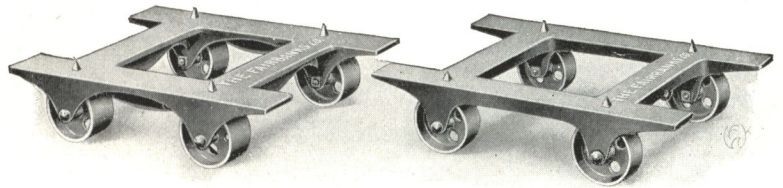


Fig. 4932. No. 1191

Fig. 4933. No. 1192

No.	1191	1192
Length, inches	21 $\frac{3}{4}$	22 $\frac{1}{4}$
Width, inches	15 $\frac{1}{4}$	15 $\frac{3}{4}$
Height, inches	5	5
Wheels, inches	4 x 1 $\frac{1}{2}$	4 $\frac{3}{8}$ x 2 $\frac{1}{4}$
Axles (Round), inches	1 $\frac{1}{2}$	1 $\frac{1}{2}$
Weight, pounds	26	36
No. 1191 or No. 1192, each	10.75	13.75

Platform or Wagon Trucks

Popular for handling sheet metal; also used in grain warehouses, freight houses, wholesale grocery, hardware stores, etc. A strong, durable construction and a convenient equipment for shops, factories and shipping departments.

No.	Size of Platform Inches	Height of Platform Inches	Size Wheels Inches	Weight Pounds	Each
1302	30x18	8	5x2	70	20.20
1325	36x24	12	7 $\frac{1}{2}$ x2 $\frac{1}{2}$	93	25.90
1327	38x26	12	7 $\frac{1}{2}$ x2 $\frac{1}{2}$	103	26.95
1331	40x28	12	7 $\frac{1}{2}$ x2 $\frac{1}{2}$	108	27.55
1334	42x30	13	8 $\frac{1}{2}$ x2 $\frac{1}{2}$	126	31.20
1336	44x32	13	8 $\frac{1}{2}$ x2 $\frac{1}{2}$	135	32.45
1338	46x34	13	8 $\frac{1}{2}$ x2 $\frac{1}{2}$	151	33.90



Fig. 4934. Platform or Wagon Truck

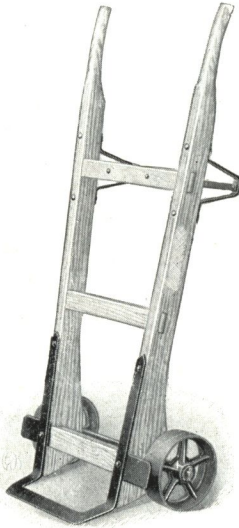


Fig. 4940. No. 204

Warehouse Trucks Boston Pattern

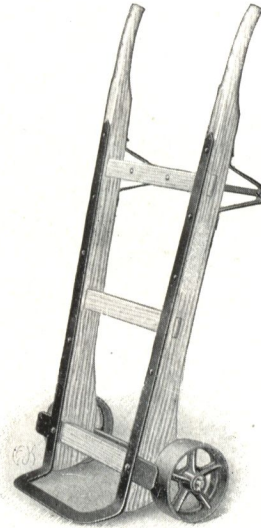


Fig. 4941. No. 205

No.	1	2	3	4	5
Length Handles, inches	48	51	54	60	66
Width at Top Bar, inches	18½	18½	21	21¼	22
Width at Nose, inches	13	14	15	16	17
Length of Nose, inches	5	5	5½	5½	6
Wheels, inches	6 x 2	7½ x 2½	8½ x 2½	10 x 2½	11 x 2½
Axle (Square), inches	7/8	7/8	1	1	1⅛
Weight, No. 204, pounds	34	45	57	72	84
Weight No. 205, pounds	37	47	60	75	87
No. 204, each	10.05	12.50	14.30	17.85	21.20
No. 205, each	10.65	13.15	15.50	18.95	22.90

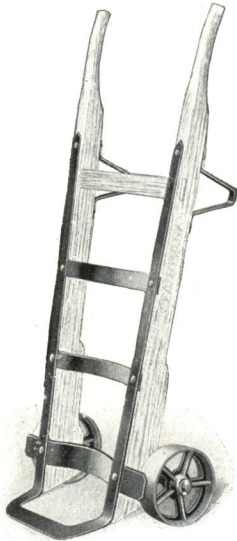


Fig. 4942. No. 301. Top Cross Bar Wood

Barrel Trucks New York Pattern

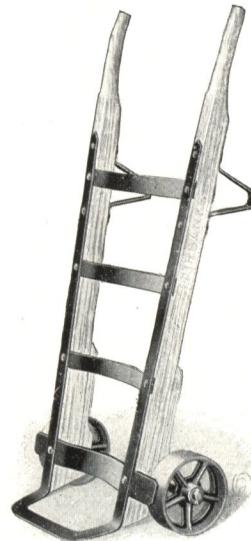


Fig. 4943. No. 301-A. All Iron Cross Bars

No.	1	2	3	4	5
Length Handles, inches	48	51	54	60	66
Width Top Bar, inches	18½	18½	21	21¼	22
Width at Nose, inches	13	14	15	16	17
Length of Nose, inches	5	5	5½	5½	6
Wheels, inches	6 x 2	7½ x 2½	8½ x 2½	10 x 2½	11 x 2½
Axle (Square), inches	7/8	7/8	1	1	1⅛
Weight No. 301, pounds	38	49	65	83	100
Weight No. 301-A, pounds	42	51	69	86	104
No. 301, each	10.30	13.00	15.65	18.95	22.20
No. 301-A, each	11.05	13.80	16.50	19.80	23.10

Warehouse Trucks



Fig. 4950. No. 199

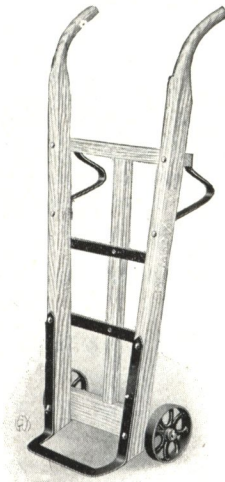


Fig. 4951. No. 214



Fig. 4952. No. 215

These Trucks are designed for handling light cases and bags of small dimensions. Light construction, but amply strong for the service for which they are intended.

	199	214	215
No.	199	214	215
Length of Handles, inches.	44	46	46
Width at Top Bar, inches.	16	17½	17½
Width at Nose, inches.	12½	12	12
Length of Nose, inches.	3¾	4½	4½
Wheels, inches.	6 x 1¼	6 x 1½	6 x 1½
Axle, inches.	5/8 Round	¾ Square	¾ Square
Approximate Weight, pounds.	22	28	24
Trucks, each.	4.50	7.40	6.85

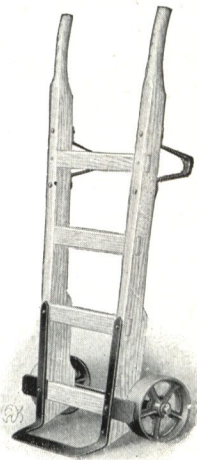


Fig. 4953. No. 272, Half Strapped

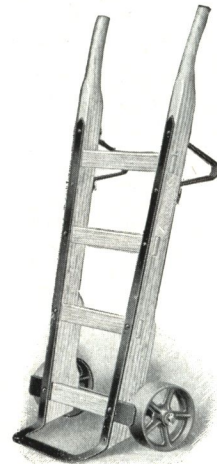
New York
Pattern

Fig. 4954. No. 272-A, Full Strapped

	1	2	3	4	5
No.	48	51	54	60	66
Length of Handles, inches.	18½	18½	21	21¼	22
Width at Top Bar, inches.	13	14	15	16	17
Width at Nose, inches.	5	5	5½	5½	6
Length of Nose, inches.	6 x 2	7½ x 2½	8½ x 2½	10 x 2½	11 x 2½
Wheels, inches.	7/8	7/8	1	1	1 1/8
Axle (Square), inches.	34	45	56	71	86
Weight, 272, pounds.	36	46	59	75	89
Weight 272-A, pounds.	9.20	11.40	13.50	16.60	19.85
No. 272, each.	9.95	12.35	14.65	17.60	21.50
No. 272-A, each.					

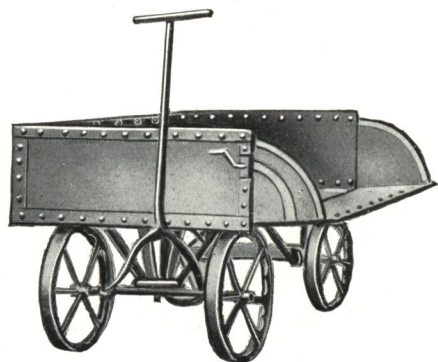


Fig. 4960. Coal or Coke Wagon

Coal or Coke Wagons

Designed for carrying coal or other materials from stock pile. Suitable for gas houses, engine rooms, etc.

Can be furnished with either flat or flanged wheels.

Door can be placed on either side or at the end.

The dimensions listed are standard, but the wagons can be made any size called for. Wheelbase or track gauge will be furnished as listed unless otherwise ordered.

Coal or Coke Wagons

No.	Capacity Pounds	Length Inches	Width Inches	Depth Inches	Wheels Inches	Wheelbase Inches	Gauge of Track Inches	Price Each
20	550	58	30	10	16	24	20	60.00
21	715	64	32	11	16	26	22	70.00
22	1032	68	34	14	16	32	24	75.00
23	1210	68	36	14	16	32	24	80.00
24	1570	75	42	15½	16	36	30	90.00
25	2035	92	41	16	16	40	30	110.00

Trolley Tipping Buckets and Coal Tubs

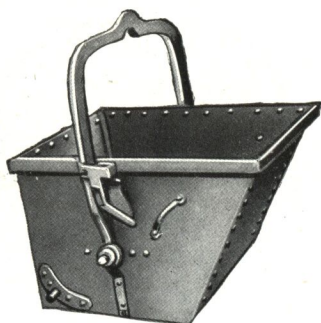


Fig. 4961. Trolley Tipping Bucket

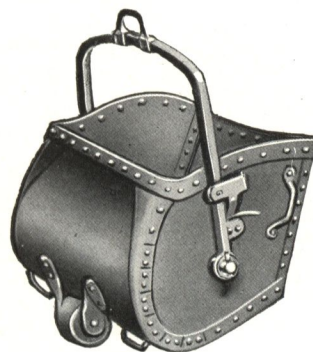


Fig. 4962. Coal Tub—Side Catch

Trolley Tipping Bucket

No.	60	61	62	63	64	65	66	67	68	69
Capacity Coal, pounds	300	400	500	600	700	900	1050	1350	1800	2100
Capacity, cubic feet	6	8	10	12	14	18	21	27	36	42
Length, inches	33	36	41	42	48	44	48	48	58	60
Width, inches	26	27	30	33	33	37	43	46	54	58
Depth, inches	19	22	24	25	27	29	30	31	33	33
Price, each	29.00	32.00	36.00	40.00	50.00	60.00	70.00	84.00	94.00	103.00

Coal Tubs—Side Catch

Nos. 24 to 27, Inclusive, Horse-power. No. 28 and Larger, Steam Power

No.	24	25	26	27	28	29	30	31	32	33	34	35
Capacity Coal, pounds	250	335	400	500	400	500	560	600	600	700	800	900
Capacity, cubic feet	5	7	8	10	8	10	11	12	12	15	16	18
Weight, pounds	155	165	190	225	250	280	300	320	340	410	435	445
Gauge	10	10	10	10	8	8	8	8	8	8	8	8
Height Top of Bail, inches	34½	36	36½	41	38	41½	42	42	43	46	48	48½
Length Over All, inches	29	31½	33½	36	34	36	37	37½	38	40½	42½	43
Width Over All, inches	29	32	33	35½	34½	36	38	39	39	42	43	44
Price, each	30.00	32.50	35.00	40.00	40.00	44.00	45.00	60.00	65.00	75.00	80.00	85.00

We can also furnish Coal Tubs with Back Lever Catch or for Automatic Dump. Sizes and prices on application.

Larger capacities to 2240 pounds can be furnished.

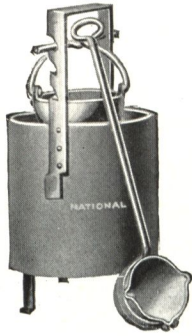


Fig. 4970. On Legs

Size Furnace Inches
18 x 24
24 x 24
30 x 24

Size Pot Inches
13
13½
18

Capacity Pot Pounds
140
280
560

Melting Furnaces

Lead Melting Furnaces

With Melting Pot, Swing Grate
Step Arms, Hook Bar
and Ladle

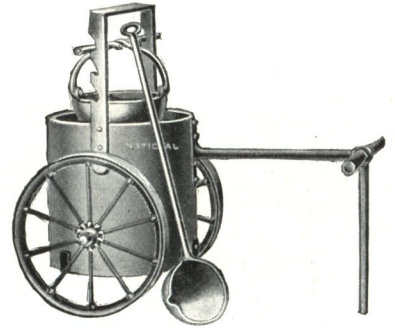


Fig. 4971. On Wheels

On Legs Complete
36.00
44.00
52.00

On Wheels Complete
50.00
60.00
80.00

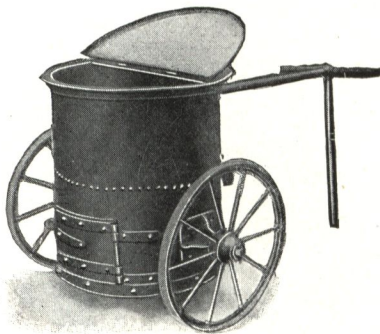


Fig. 4972. Without Draw-off

Round Pattern
with and
without Draw-off



Fig. 4973. With Draw-off

Portable Round Tar Kettles—Two Wheels

Capacity, gallons.....	50	75	100	150	200	250	300	400
Price, each.....	240.00	280.00	340.00	420.00	500.00	600.00	700.00	1000.00

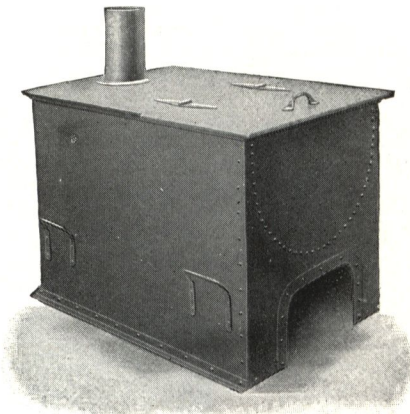


Fig. 4974. Without Wheels

Square Pattern Dog House and Portable

Can be furnished with
two wheels if
preferred

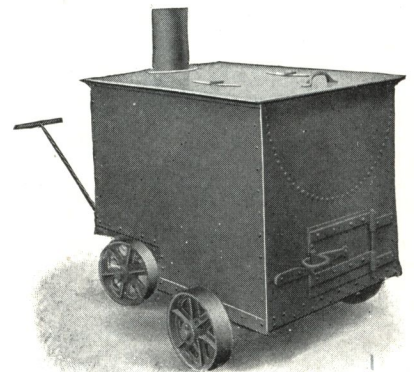


Fig. 4975. Four-wheel Furnace

Capacity, gallons.....	50	75	100	125	150	200	250	300	400
Without Wheels.....	120.00	160.00	180.00	200.00	240.00	280.00	.....	.....	.....
With Two or Four Wheels....	200.00	240.00	300.00	330.00	360.00	490.00	500.00	600.00	800.00

Improved Joint Runner

The one-piece clamp does away with any adjustable parts and is so constructed as to hold the joint runner together by compression.

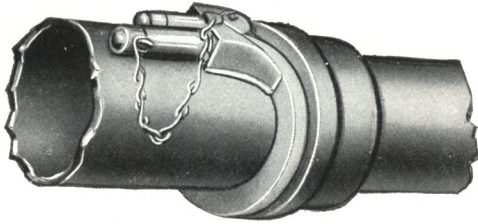


Fig. 4980. Round

No.	For Pipe, Inches	Each
1	2-3-4	2.30
2	4-5-6	2.45
3	6-8-10	4.70
4	10-12-14	6.20

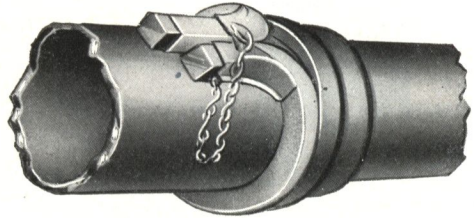
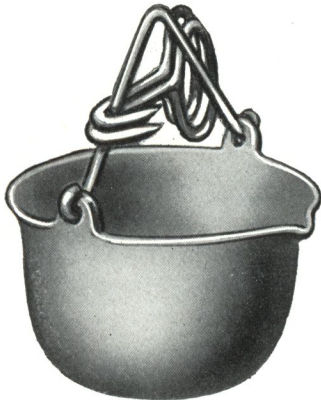


Fig. 4981. Square

No.	Size Pipe, Inches	Each
5	16-18-20	9.65
6	24	10.70
7	36	13.80
8	42	15.85

Fig. 4982
Pressed Steel Melting Kettle

Pressed Steel Melting Kettle

With pouring lip, hinged bail and tilting hooks

Diameter of Bowl, inches.....	7	8	9	10
Capacity, pounds.....	50	75	100	125
Price, each.....	4.50	5.10	6.30	7.50

Depth of bowl is about three-quarters its diameter.

Pressed Steel Dipping and Pouring Kettle

Rigid bail, bent handle, broad spout

Diameter, inches.....	8	10
Depth, inches.....	5	5
Capacity, pounds.....	50 to 75	75 to 100
Price, each.....	4.80	7.70

Fig. 4984. Pressed Steel Dipping
and Pouring Kettle

Fig. 4985. Heavy Pressed Steel Ladle

Diameter of Bowl, inches.....	6	7	8	9	10	11	12	14
Depth of Bowl, inches.....	3¼	3⅝	4	4¼	4¾	5½	6	7
Capacity, pounds.....	23	35	59	106	141	159	188	354
Length Handle, inches.....	29	30	33	35	40	40	44	44
Price, each.....	3.20	3.80	4.80	6.30	7.60	8.40	9.60	10.80

Heavy Cast Iron Melting Pot

As Used with Portable Lead Melting Furnaces

Fig. 4986

Diameter at Top, inches.....	8	9	10½	13	13½	14½	18
Capacity, lead, pounds.....	35	53	70	140	280	350	560
Price, each.....	4.40	5.60	7.00	12.00	16.00	20.00	32.00

Fig. 4986
Cast Iron Melting Pot

Heavy Steel Ladles with Wrought Iron Handles

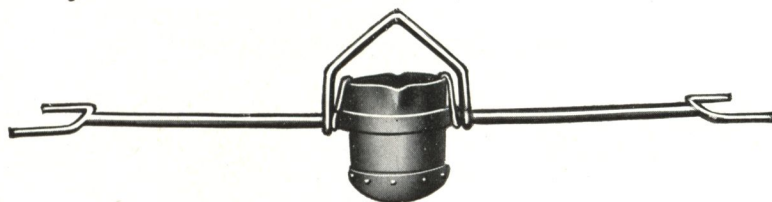


Fig. 4990. Heavy Steel Ladle

Diameter at Top, inches.....	10	11	12	13	15	17
Depth of Ladle, inches.....	9½	10½	11½	12½	15	17
Approximate Capacity, pounds.....	100	150	200	250	300	500
Price, each.....	32.00	36.00	40.00	44.00	50.00	64.00

Caldrons to Set in Brick Work

Standard Caldrons are of proper weight and thickness for boiling water, oil, varnish, vegetables, cattle food, etc. Caldrons for melting lead, tin or spelter, etc., should be made heavier and are furnished at special prices.

Can be furnished for capacities up to 3,000 gallons.



Fig. 4991. Caldron to Set in Brick

Capacity Gallons	Price Each	Diameter Including Rim Inches	Inside Diameter Inches	Inside Depth Inches
5	3.25	17	14	9½
7	4.75	18	16	10
9	5.10	20½	18	11
11	6.55	22½	19¼	12¼
15	7.25	25½	21¾	14½
21	10.55	27½	23¾	16
27	14.15	29½	25¼	17
32	15.60	31	27¾	17
43	21.05	34	30¼	18¾
54	21.75	36½	32¾	20
69	34.45	39½	36	21
83	38.80	42½	39	21½
105	50.75	45½	42	23¼
135	54.05	49	45¼	24½

Tanks for Metal Platers, Chemists, Etc.

Any alterations in patterns, such as casting on bosses, drilling holes for outlet, etc., can be done at a slight additional cost.

Where these tanks are ordered enameled, it is understood that we assume no responsibility for the durability of this finish.



Fig. 4992. Platers' Tank

Plain and Enameled Iron Tanks

Capacity, Gallons	Plain, Each	Inside, Inches	Outside, Inches
17	10.15	15½ x 15½ x 17¾	18 x 18 x 18
25	11.95	19 x 19 x 17¾	20½ x 20½ x 18
35	12.70	19½ x 19½ x 23¼	22 x 22 x 23½
38	17.40	33½ x 15½ x 18	36 x 18 x 18¼
40	19.40	27 x 19 x 18	28¼ x 20¼ x 18¼
48	19.95	36 x 18 x 18	38½ x 21 x 18¼
56	23.20	27 x 27 x 18	30½ x 30½ x 18¼
60	25.40	33½ x 24½ x 18	36½ x 27¼ x 18¾
80	28.65	33½ x 33½ x 17¾	36 x 36 x 18
100	37.70	33¼ x 28 x 26¾	36¼ x 30¾ x 27

Enameled tanks quoted specially.

Ash Cans—Covers—Rubbish Burners



Fig. 5000

Fig. 5000. Galvanized, Drop Handles
Rolled Bottom Hoop, Watertight

No.	Diameter Inches	Depth Inches	Cover No. to Fit	Price Per Dozen
2	14	15½	12	37.00
2½	14	18	12	44.30
3	15	26	13	51.80
4	17	26	14	59.00
5	18	26	15	66.60
6	20	26	16	77.30
16	20	30	16	96.00

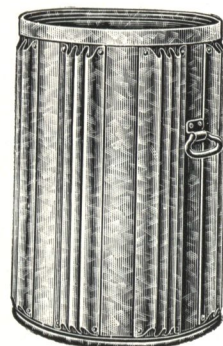


Fig. 5001

Fig. 5001. Galvanized, Ribbed Steel Staves
Extra Heavy. Drop Handles

No.	Diameter Inches	Depth Inches	Cover No. to Fit	Price Per Dozen
170	15	26	13	73.50
180	17	26	14	80.40
190	18	26	15	88.40
200	20	26	16	103.30

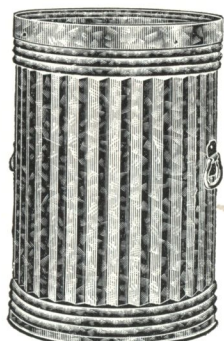


Fig. 5002

Fig. 5002. Galvanized, Extra Heavy
Corrugated Body. Heavy Rolled Bottom Hoop. Watertight

No.	Diameter Inches	Depth Inches	Without Cover Per Dozen	No.	With Cover Per Dozen
61	14	18	57.80	161	64.00
71	15	26	65.20	171	73.50
81	17	26	70.20	181	80.40
91	18	26	76.00	191	88.40
101	20	26	88.60	201	103.30



Fig. 5003

Fig. 5003. Engineers' Steel Ash Cans
Japanned. Extra Heavy. Stationary Handles

No.	Diameter Inches	Depth Inches	Price Each
030	15	24	10.20
040	17	24	11.10
050	18	24	12.00
060	20	24	12.95



Fig. 5004

Fig. 5004. Galvanized Engineers' Steel Ash Cans
Extra Heavy. Stationary Handles

No.	Diameter Inches	Depth Inches	Price Each
130	15	24	11.10
140	17	24	12.40
150	18	24	12.95
160	20	24	13.85

Fig. 5005. Galvanized Engineers' Steel Ash Cans
Extra Heavy. Double Ribbed Steel Staves. Stationary Handles

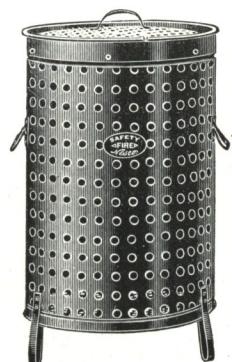
No.	Diameter Inches	Depth Inches	Price Each
140½	17	24	13.85
150½	18	24	14.75
160½	20	24	15.70



Fig. 5005

Fig. 5006. Safety Rubbish Burners
Japanned Black

No.	Diameter Inches	Depth Inches	Price Per Dozen
1	12½	21	42.00
2	14	24½	50.00
3	16½	27	60.00
4	20	33	72.00

Fig. 5006
Safety Rubbish Burner

Ash Can Covers—Seamless

To Fit Over Outside of Can. 1½-Inch Deep Rim

No.	12	13	14	15	16
Diameter, inches	14½	15	17	18	20½
Per Dozen	6.20	8.30	10.20	12.40	14.70



Fig. 5007. Ash Can Cover

Underground Gasoline Storage Outfits

Underground Gasoline Storage Barrels

Complies with Underwriters' Regulations

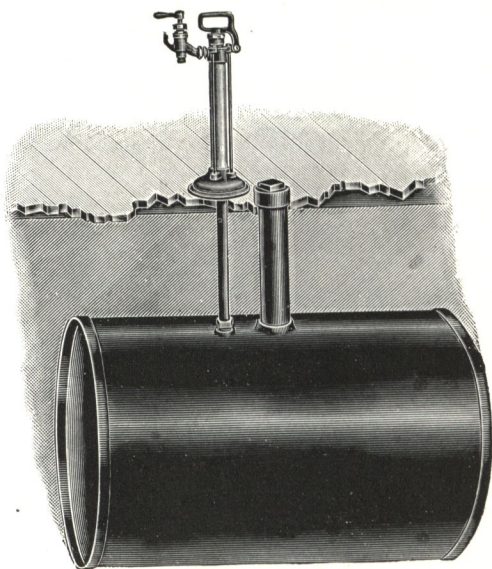


Fig. 5010. Gasoline Storage Barrel

Equipment Nos.....	3	31
Capacity, gallons.....	55	110
Diameter, inches.....	22½	30
Length, inches.....	35½	43
Chime Hoops, inches.....	1¾	1¾
Shells and Heads, gauge.....	14	13
Price, with Pump.....	56.00	72.00

We furnish a 2-inch galvanized fill pipe, 36 inches long with connection for tank. This pipe has a cap with vent hole. Also a 1-inch galvanized suction pipe extending to the bottom of the tank and 36 inches above the tank with connection for tank. The pump for this outfit is the "Little Dandy" Garage Pump. It is a direct action pump, has 2½-inch cylinder and 6-inch stroke. It is approved by the Board of Underwriters.

Underground Gasoline Storage Barrels

Complies with Underwriters' Regulations

Equipment Nos.....	1	11
Capacity, gallons.....	55	110
Diameter, inches.....	22½	30
Length, inches.....	35½	43
Chime Hoops, inches.....	1¾	1¾
Shells and Heads, gauge.....	14	13
Price, with Pump.....	60.00	80.00

We furnish a 2-inch galvanized fill pipe, 36 inches long with connection for tank. This pipe has a cap with vent hole. Also a 1-inch galvanized suction pipe extending to the bottom of the tank and 18 inches above the tank with connection for tank; two 1-inch galvanized elbows. With this outfit we furnish a "Soo" Garage Pump. This pump will elevate gasoline or oil and deliver at any point within a 50-foot radius. A trip valve for draining is a feature of this pump, as well as a locking device. The pump has 2½-inch cylinder and 5-inch stroke. It is approved by the Board of Underwriters.

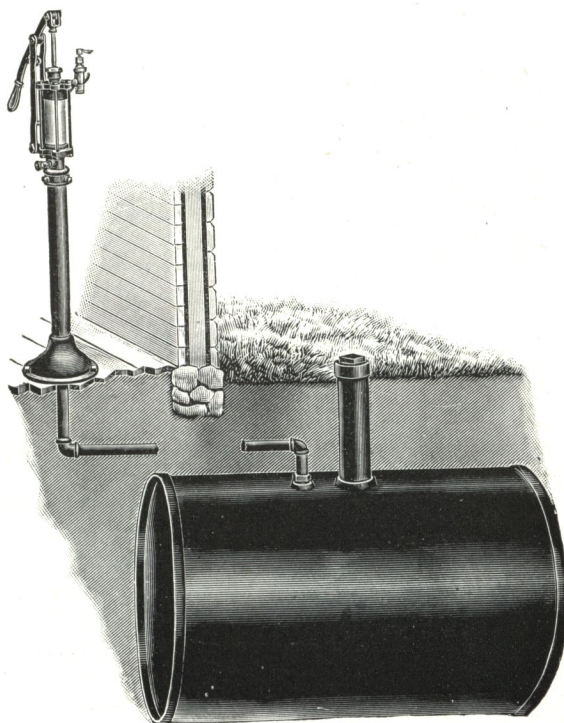
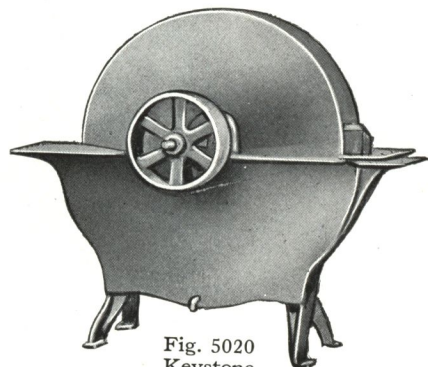


Fig. 5011. Gasoline Storage Barrel

Grinding Wheels

Fig. 5020
Keystone

Keystone Iron Frame Power Grindstone

The following are stock sizes and can be furnished with stone suitable for any service.

Regularly furnished with pulley, 12 inches diameter, 4-inch face; loose pulley, 3.00 extra.

No.	Diameter Inches	Thickness Inches	Complete, Each
304K	30	4	38.00
366K	36	6	49.00
406K	40	6	51.00
486K	48	6	68.00
488K	48	8	75.00

Little Giant Iron Frame Power Grindstone

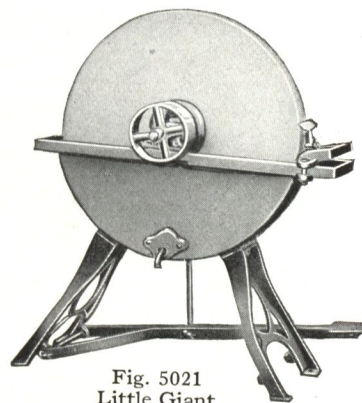
Designed to meet the demand for a light power grindstone or a grindstone for either hand or power use.

Frame is cast iron, the trough being cast in one piece and the legs securely bolted to the frame. An adjustable tool rest and drip pan furnished with each machine.

Steel shaft $\frac{3}{4}$ inch diameter, ball bearings and a 6-inch pulley are supplied for power use, or furnished for hand use with a heavy steel treadle and a hand-crank.

Diameter, 24 inches; thickness, $3\frac{1}{2}$ to 4 inches.

Price with Pulley only	16.00
Price with Treadle, Crank and Pulley	17.50

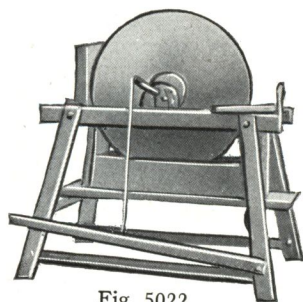
Fig. 5021
Little Giant

Hercules Oak-mounted Grindstone

Frame is made of seasoned hardwood with oil and varnish finish, making this the best wood-mounted grindstone on the market.

Furnished with crank, treadle, water trough and clothes protector.

Size, Inches	Each	Size, Inches	Each
18 x $2\frac{1}{2}$	6.50	26 x 3	10.00
20 x $2\frac{1}{2}$	7.00	28 x 3	11.50
22 x $2\frac{1}{2}$	8.00	30 x 3	12.00
24 x 3	9.00	30 x 4	14.00
		36 x 4	20.00

Fig. 5022
Hercules

Carborundum Grinders

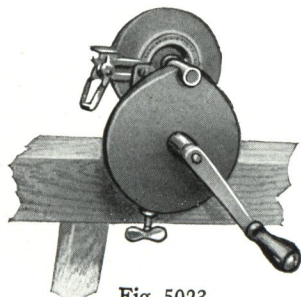
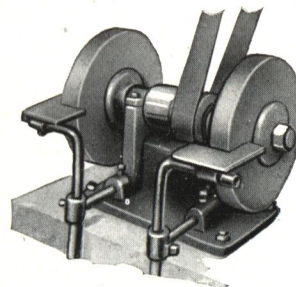
No. 1. For household use, hotels, clubs, butcher shops; wheel 4-inch diameter, 1 inch thick, fine grit... 4.00

No. 2. Practically the same as No. 1, but designed for heavier work in woodworking and repair shops, etc. Wheel 5 x 1 inch, medium grit... 5.50

No. 3. With 6 x 1 medium grit wheel and an adjustable tool-grinding guide... 7.50

No. 4. With adjustable tool-grinding guide and $7\frac{3}{8}$ x $1\frac{1}{4}$ inch wheel... 10.50

No. 28. Power Grinder Head, for small shops, etc., where power is available. Sturdy and dependable. Fitted with a 7-inch fine and coarse wheel for general grinding purposes. Price, complete... 18.00

Fig. 5023
Hand Grinders, Nos. 1, 2, 3
and 4, for Hand UseFig. 5024
No. 28 Power Grinder Head

Grinding Wheels

Grits and Grades of Carborundum and Aloxite Wheels for Various Classes of Grinding

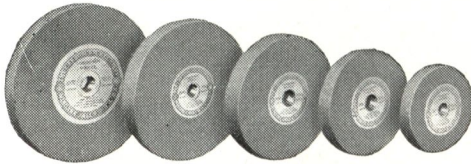


Fig. 5030. Grinding Wheels

The following table of grits and grades of wheels for different kinds of grinding must be understood as general. Where orders specify the service, the proper grade will be selected and furnished.

Work	Grit Numbers	Grade Letters
Brass.....	24 to 36	I to J
Cast Iron.....	20 to 30	G x to H x
Knives.....	60 to 80	M
Shears.....	100 to 120	K to M
Tools (large).....	30 to 40	I to J
Tools (small).....	50 to 70	J to K
General Use.....	30 to 40	H to J

Standard Price List for Grinding Wheels

Diam. Inches	Thickness of Wheels, Inches																Rev. Per Minute
	1/4	1/2	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4	4	
1	.40	.50	.60	.70	.80	.95	1.05	1.15	1.25	1.35	1.45	1.55	1.70	1.80	1.90	2.00	18000
2	.60	.75	.90	1.00	1.15	1.30	1.45	1.60	1.75	1.85	2.00	2.15	2.30	2.40	2.55	2.70	10000
3	.80	1.00	1.20	1.45	1.65	1.85	2.30	2.30	2.50	2.70	2.95	3.15	3.35	3.55	3.80	4.00	7000
4	1.10	1.40	1.65	1.95	2.25	2.55	2.80	3.10	3.40	3.70	4.00	4.25	4.55	4.80	5.10	5.40	5300
5	1.50	1.90	2.25	2.65	3.00	3.40	3.80	4.15	4.55	4.90	5.30	5.70	6.05	6.40	6.80	7.20	4200
6	1.90	2.40	2.90	3.40	3.90	4.45	4.95	5.40	5.95	6.50	7.00	7.50	8.00	8.50	9.00	9.50	3500
7	2.30	2.95	3.60	4.30	4.95	5.60	6.30	6.90	7.55	8.20	8.90	9.60	10.25	10.90	11.55	12.20	3000
8	2.70	3.55	4.40	5.20	6.10	6.90	7.80	8.60	9.45	10.30	11.15	12.00	12.85	13.70	14.55	15.40	2600
9	3.10	4.15	5.20	6.30	7.40	8.40	9.50	10.60	11.65	12.70	13.75	14.80	15.90	17.00	18.05	19.10	2300
10	3.60	4.90	6.20	7.50	8.90	10.20	11.50	12.80	14.10	15.40	16.70	18.00	19.35	20.70	22.00	23.30	2100
12	4.20	6.00	7.80	9.50	11.30	13.10	14.90	16.70	18.45	20.20	22.00	23.80	25.55	27.30	29.10	30.90	1750
14	4.90	7.20	9.60	11.90	14.20	16.50	18.90	21.20	23.50	25.80	28.15	30.50	32.80	35.10	37.45	39.80	1500
16	5.70	8.70	11.60	14.60	17.60	20.50	23.50	26.50	29.45	32.40	35.35	38.30	41.30	44.30	47.25	50.20	1300
18	6.60	10.30	14.00	17.70	21.40	25.10	28.80	32.50	36.15	39.80	43.50	47.20	50.90	54.60	58.30	62.00	1150
20	.....	12.30	16.80	21.40	25.90	30.50	35.00	39.60	44.15	48.70	53.35	58.00	62.50	67.00	71.50	76.00	1050
22	.....	.....	20.10	25.60	31.10	36.70	42.20	47.70	53.35	59.00	64.50	70.00	75.50	81.00	86.50	92.00	950
24	.....	.....	24.00	30.60	37.30	44.00	51.00	59.00	65.00	71.00	78.00	85.00	92.00	99.00	106.00	113.00	850
26	.....	.....	.....	36.40	44.50	52.50	61.00	69.00	77.00	85.00	93.00	101.00	109.00	117.00	125.00	133.00	775
30	.....	.....	.....	.....	58.00	68.00	79.00	89.00	100.00	111.00	122.00	132.00	143.00	153.00	164.00	174.00	705
36	.....	.....	.....	.....	.....	94.00	109.00	124.00	139.00	154.00	169.00	183.00	198.00	213.00	228.00	243.00	520

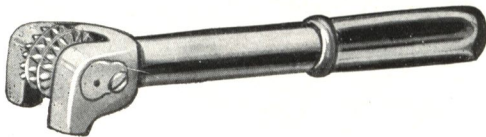


Fig. 5032. Huntington Wheel Dresser, for truing, shaping, sharpening and removing glaze from solid wheels running at full speed.

Dresser (two sets of cutters).....	2.50
Extra Cutters, per set.....	.25



Fig. 5033. Carborundum Stick

Wheel Dresser

Consists of a steel tube enclosing or holding a stick of Carborundum 1/2-inch diameter and 6 inches long. The stick can be fed out or adjusted as desired by turning the collet nut which contracts the split end of the tube.

Recommended for dressing and truing grinding wheels of all makes, in fine and medium grits, and for grinding reamers, cutters, drills, and also for universal and cylinder grinding wheels.

No. 55. Dresser with one 1/2 x 6 inch Carborundum Stick, per dozen.....	36.00
No. 56. Extra Carborundum Stick for Dresser, per dozen.....	3.60

Carborundum Valve Grinding Compound



Fig. 5031. Grinding Compound

For the use of the garage, machine shop, and the general repair shop, Carborundum Valve Grinding Compound is put up in tins containing one and five pounds, in three grades—coarse, medium and fine.

Carborundum Valve Grinding Compound, per one-pound can.....	.50
Carborundum Valve Grinding Compound, per five-pound can.....	2.00

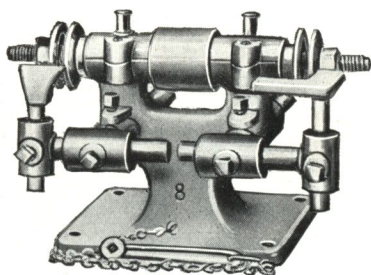
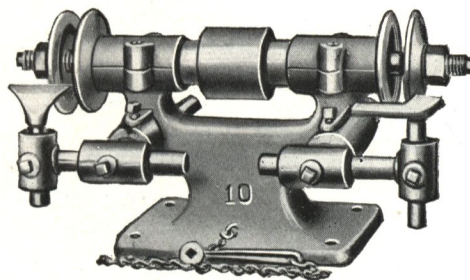
Combination for Valve Grinding Compound



Fig. 5034

Carborundum Valve Grinding Compound is also put up in a handy combination can. The can is divided into two compartments, one for holding the fine compound, the other for holding the coarse compound. The can is most convenient for the car owner, motorcyclist or motor-boat owner.

Carborundum Valve Grinding Compound, coarse and fine, in combinations cans, per can.....	.25
--	-----

Grinding
MachinesColumns, Countershaft
Etc.Fig. 5040. 8-Inch Grinding Machine
For Wheels up to $8 \times 1 \times \frac{1}{2}$ inchesFig. 5041. 10-Inch Grinding Machine
For Wheels up to $10 \times 1\frac{1}{2} \times \frac{3}{4}$ inches

Distributed through the shop, near lathes, screw machines and in the tool room, these machines are time savers and an inexpensive means of keeping tools in first class condition.

8-Inch Head, Fig. 5040

Size of Base.....	7 x 6 inches
Height from Base to Center of Spindle.....	$5\frac{1}{4}$ inches
Entire Length of Plain Spindle.....	11 inches
Entire Length of Jewelers' Spindle.....	$13\frac{7}{8}$ inches
Length of each Bearing.....	2 inches
Diameter of Spindle in Bearings.....	$\frac{5}{8}$ inch
Diameter of Spindle Between Flanges.....	$\frac{1}{2}$ inch
Diameter of Flanges.....	4 inches
Size of Pulley on Spindle.....	$2 \times 1\frac{3}{4}$ inches
Distance Between Wheels.....	7 inches

COLUMN—The Column is furnished with table and shelf and has a water bucket which may be swung under the table out of the way when not in use.

Height from Floor to Top of Table.....	$36\frac{3}{4}$ inches
Size of Base.....	13×16 inches
Size of Table.....	12×15 inches

COUNTERSHAFT—The 8-Inch Patented Countershaft described on page 505 is made for use with this machine. It should run about 610 R. P. M.

GUARDS—Steel or cast iron wheel guards can be furnished at an additional cost.

10-Inch Head, Fig. 5041

Size of Base.....	$9 \times 6\frac{1}{2}$ inches
Height from Base to Center of Spindle.....	$6\frac{1}{2}$ inches
Entire Length of Spindle.....	17 inches
Entire Length of Four Wheel-Spindle.....	20 inches
Entire Length of Spindle with Taper Arbors.....	$21\frac{1}{4}$ inches
Taper of Arbors per inch.....	.01 inch
Length of Each Bearing.....	$2\frac{3}{4}$ inches
Diameter of Spindle in Bearings.....	$\frac{7}{8}$ inch
Diameter of Spindle Between Flanges.....	$\frac{3}{4}$ inch
Diameter of Flanges.....	5 inches
Size of Pulley on Spindle.....	$2\frac{3}{4} \times 2\frac{1}{4}$ inches
Distance Between Wheels.....	11 inches

COLUMN—The Column is furnished with table and shelf and has a water bucket which may be swung under the table out of the way when not in use.

Height from Floor to Top of Table.....	34 inches
Size of Base.....	14×18 inches
Size of Table.....	14×16 inches

COUNTERSHAFT—The 10-Inch Patented Countershaft described on page 505 is made for use with this machine. It should run about 550 R. P. M.

GUARD—Steel or cast iron wheel guards can be furnished with this machine at an additional cost.

Prices 8-Inch

Head (plain) only.....	5.00
Head (jewelers' spindle) only.....	6.50
Head (with rests) only.....	9.00
Column only.....	8.50
Countershaft only.....	7.50
Head (plain), Column and Countershaft.....	21.00
Head (jewelers' spindle), Column and Countershaft.....	22.50
Head (with rests), Column and Countershaft.....	25.00

Prices 10-Inch

Head only.....	11.50
Head (for four wheels) only.....	13.50
Head (with taper arbors) only.....	17.00
Columns only.....	10.00
Countershaft only.....	9.50
Head, Column and Countershaft.....	31.00
Head (for four wheels), Column and Countershaft.....	33.00
Head (with taper arbors), Column and Countershaft.....	36.50

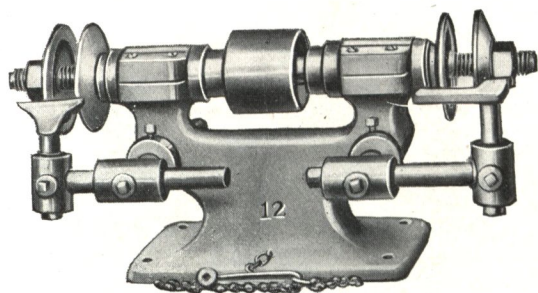


Fig. 5050. 12-Inch Grinding Machine

Grinding Machines and Countershafts

12-inch Grinding Machine for wheels up to 12 x 2 x 1 inch.

Used for tool grinding and a large variety of similar work.

Takes wheels up to 12 inches in diameter with 2-inch face and 1-inch hole.

Has removable, interchangeable engine lathe boxes and is self-oiling.

COLUMN—The column is furnished with table and shelf and has a water bucket which may be swung under the table out of the way when not in use.

Height from Floor to Top of Table.....31 $\frac{1}{4}$ inches

Size of Base.....16 x 21 inches

Size of Table.....16 x 21 inches

COUNTERSHAFT—The 12-Inch Patented Countershaft described below is made for use with this machine. It should run about 495 R. P. M.

GUARDS—Steel or cast iron wheel guards can be furnished at an additional cost.

WATER ATTACHMENT—A water attachment can also be furnished at an additional cost. Both a right and a left hand attachment are made, although the left hand is more commonly used and is the only one ordinarily carried in stock.

SURFACE GRINDING ATTACHMENT—A surface grinding attachment is furnished with this machine at an additional cost. Although not so quickly adjusted as a similar attachment on the larger machines, it is found convenient where a small amount of surfacing is to be done.

Specifications and Prices 12-Inch Grinding Machine

Size of Base.....	12 x 8 inches
Height from Base to Center of Spindle.....	7 $\frac{3}{4}$ inches
Entire Length of Spindle.....	22 $\frac{1}{2}$ inches
Entire Length of Four-Wheel Spindle.....	26 inches
Entire Length of Spindle with Taper Arbors.....	8 $\frac{1}{2}$ inches
Taper of Arbors per inch.....	.01 inch
Head only.....	23.00
Head (for four wheels) only.....	26.00
Head (with taper arbors) only.....	30.00
Column only.....	11.50

Length of Each Bearing.....	3 $\frac{3}{4}$ inches
Diameter of Spindle in Bearings.....	1 $\frac{1}{8}$ inches
Diameter of Spindle Between Flanges.....	1 inch
Diameter of Flanges.....	.6 inches
Size of Pulley on Spindle.....	3 $\frac{1}{2}$ x 2 $\frac{3}{4}$ inches
Distance Between Wheels.....	15 inches
Countershaft only.....	11.50
Head, Column and Countershaft.....	46.00
Head (for four wheels), Column and Countershaft.....	49.00
Head (with taper arbors), Column and Countershaft.....	53.00

Countershafts

Pull to Stop and Pull to Start

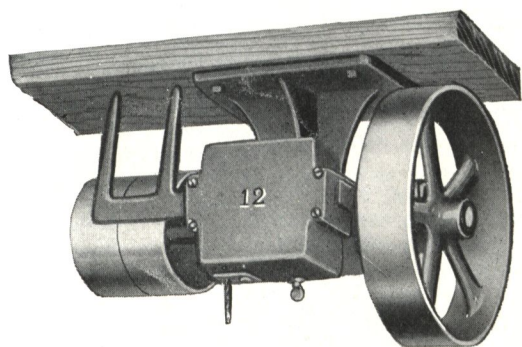


Fig. 5051. 12-Inch Countershaft

12-Inch Countershaft

This size Countershaft is furnished with the 12-Inch Grinder Heads. Can also be used with any machine running 2 $\frac{1}{2}$ -inch belts.

Tight and Loose Pulleys.....	6 x 2 $\frac{3}{4}$ inches
Driving Pulleys.....	12 x 2 $\frac{3}{4}$ inches
Drop of Hanger.....	.7 inches
Diameter of Shaft.....	1 $\frac{5}{16}$ inch
Weight, ready for shipment, about, pounds.....	85
Price.....	11.50

8-Inch Countershaft

This size Countershaft is furnished with the 8-Inch Grinder Head and 8-Inch Polishing Head. Can also be used with any machine running 1 $\frac{1}{2}$ -inch belts.

Tight and Loose Pulleys.....	4 x 1 $\frac{3}{4}$ inches
Driving Pulley.....	8 x 1 $\frac{3}{4}$ inches
Drop of Hanger.....	.5 inch
Diameter of Shaft.....	$\frac{7}{8}$ inch
Weight, ready for shipment, about pounds.....	45
Price.....	7.50

10-Inch Countershaft

This size Countershaft is furnished with the 10-Inch Grinder Head and 10-Inch Polishing Head. Can also be used with any machine running 2-inch belts.

Tight and Loose Pulleys.....	5 x 2 $\frac{1}{4}$ inches
Driving Pulley.....	10 x 2 $\frac{1}{4}$ inches
Drop of Hanger.....	.6 inch
Diameter of Shaft.....	$\frac{7}{8}$ inch
Weight, ready for shipment, about pounds.....	55
Price.....	9.50

Larger size grinders and countershafts can be furnished promptly.

Dexter Valve Reseating Machine

Fig. 5060, No. 6 T-L, is a most complete outfit for reseating all flat and taper-seated valves $\frac{1}{4}$ to 6-inch, inclusive.

This outfit includes two improved valve reseating machines, one the same size as with the No. 3 outfit (model shown in Fig. 5061), the other like model shown in Fig. 5062, with 15 steel cutters for flat seats and 15 steel cutters for taper seats, one turret valve disc-cutting machine, which will cut all flat, taper and oval discs $\frac{1}{4}$ to 6-inch, including those having radial wings or projections, check valves, etc., two sizes of disc-holding chucks, set of recess cutters, extension spindles, spanners, etc.

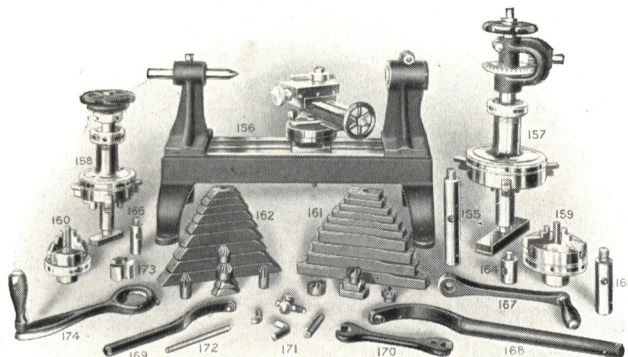


Fig. 5060. No. 6 T-L Outfit, $\frac{1}{4}$ to 6-inch

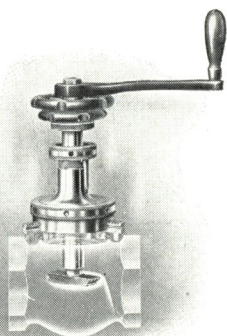


Fig. 5061. No. 4

Made in two sizes, $\frac{1}{4}$ to 3 inches; $\frac{1}{4}$ to 4 inches. No. 158 in 6 T-L Outfit.

Fig. 5061 shows the Dexter Machine for cutting valve seats $\frac{1}{4}$ to 4-inch, attached to valve. This model is made in two sizes, capacity $\frac{1}{4}$ to 3-inch and $\frac{1}{4}$ to 4-inch, and is included in all Dexter outfits for recutting flat and taper seated valves.

Fig. 5062 shows the Dexter machine for recutting valve seats 3 inch to 6 inch, and is the larger machine in outfit No. 6 T-L listed below.

These machines will recut a worn valve seat and disc accurately, making a perfectly tight valve. The same valve can be recut from 10 to 20 times. The saving of a few valves pays for a machine.

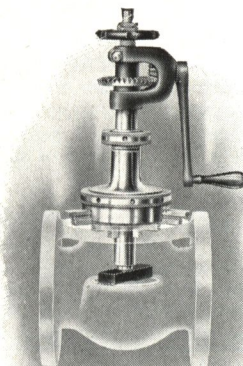


Fig. 5062. No. 6
No. 157 in 6 T-L Outfit, for sizes 3 to 6 inches.

Price List for Outfits for Flat and Taper Seated Globe Valves

Outfit No.....	3 T-L	4 T-L	6 T-L	8 T-L	10 T-L	12 T-L
For Valves, sizes.....	$\frac{1}{4}$ -3	$\frac{1}{4}$ -4	$\frac{1}{4}$ -6	$\frac{1}{4}$ -8	$\frac{1}{4}$ -10	$\frac{1}{4}$ -12
Price.....	87.50	102.50	137.50	187.50	262.50	337.50

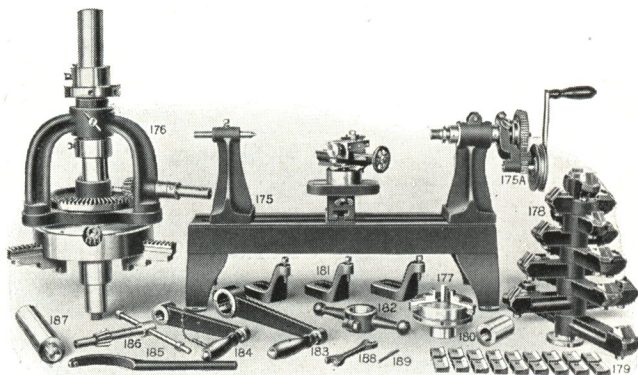


Fig. 5063. No. 12 T-L Outfit, 4 to 12 inch

Fig. 5063 shows an outfit for reseating all flat and taper-seated valves 4 to 12 inch inclusive. The No. 12 T-L Outfit, $\frac{1}{4}$ to 12 inch complete, includes Fig. 5061, $\frac{1}{4}$ to 4 inch, and a model as shown in 176 in Fig. 5063 Outfit, 4 to 12 inch, with a complete set of cutters for recutting all flat and taper valve seats $\frac{1}{4}$ to 12 inches, with one turret disc cutting machine, as shown in 175 in illustration for recutting all flat and taper valve discs $\frac{1}{4}$ to 12 inches, two disc-holding chucks, set of recess cutters, extensions to tool shaft, spanners, etc., packed in two polished cases with tray for cutters.

With the recess cutter, the extension spindle screws on to the tool shaft and the cutting tool is adjusted to cut a recess outside of the seat. A new seat is thus raised that can be trued up at least ten times—making it possible to reseat a flat-seated valve 20 times, where 12 would ordinarily be the limit.

Dexter Reseating Machine—For Gate Valves

We can furnish a special type of Dexter Reseating Machine for refacing gate valves in all sizes 2 to 14-inch. Prices and particulars on application.

Valve Reseating Tools

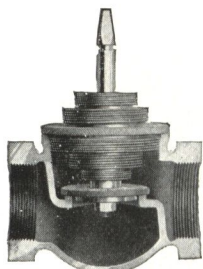


Fig. 5070
Showing Application

For refacing the seats of Jenkins Globe and Angle Valves, whether in a line of piping or not, this Valve File is a simple and efficient tool. The spindle holding the cutters has a square end, and can be readily used with an ordinary bit stock. The circular files or cutters are made of the best file steel, carefully cut and hardened, while the spindles are of machinery steel, the bushings of cast iron, and the guides of brass. Where many valves are used, this valve file is an indispensable tool.

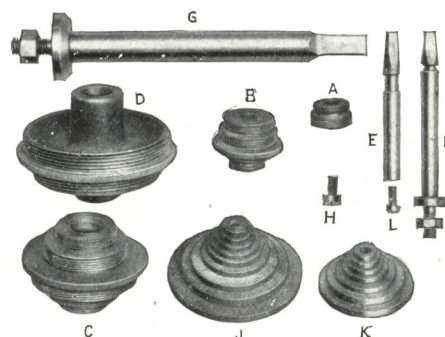


Fig. 5071. Parts in each Set

Price List Patent Valve File

Set No.	Number of Valve Sizes in Complete Set	Parts Used For	Price Complete Set	Set No.	Number of Valve Sizes in Complete Set	Parts Used For	Price Complete Set
1	4	3/8-in. Valve, B. E. L. & J. 1/2-in. Valve, B. E. H. & J. 3/4-in. Valve, B. F. K. & J. 1-in. Valve, B. F. K. & J.	9.00				
2	5	3/4-in. Valve, C. F. K. & J. 1-in. Valve, C. F. K. & J. 1 1/4-in. Valve, C. F. K. & J. 1 1/2-in. Valve, C. F. K. & J. 2-in. Valve, C. F. K. & J.	12.00	4	9	3/8-in. Valve, A. E. L. & J. 1/2-in. Valve, A. E. H. & J. 3/4-in. Valve, C. F. K. & J. 1-in. Valve, C. F. K. & J. 1 1/4-in. Valve, C. F. K. & J. 1 1/2-in. Valve, C. F. K. & J. 2-in. Valve, C. F. K. & J. 2 1/2-in. Valve, D. G. K. & J. 3-in. Valve, D. G. K. & J.	23.00
3	7	3/8-in. Valve, A. E. L. & J. 1/2-in. Valve, A. E. H. & J. 3/4-in. Valve, C. F. K. & J.	15.00				

Patent Valve File For Jenkins Iron Body Valves

Fig. 5072 illustrates a new type of valve file for refacing the seats of iron body valves, which is operated by means of a circular hand wheel.

Fig. 5072. For Refacing Seats of Iron Body Valves
Set No. 5, 2 inches to 6 inches, eight sizes. . . . 60.00



Fig. 5072. Patent Valve File

Skinner Valve Reseating Tools

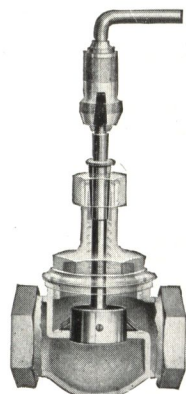


Fig. 5073
Showing Application

This device has a place in every plant that uses globe and angle valves. It will pay for its cost on the first few valves saved on the pipes, and with proper care will last a lifetime.

By using the bonnet of the valve with the taper bushing for a guide at the top, and the guide in the opening of the valve, a perfect alignment with the stem is assured. The cutters are tempered steel, giving a sheer cut, with ample clearance.

With this device the seats of globe and angle valves, both flat and taper, can be recut without removing them from the pipes.

Valve Sizes, 1/2 to 2 ins., per set, complete. . . 20.00
Valve Sizes, 1/2 to 3 ins., per set, complete. . . 30.00

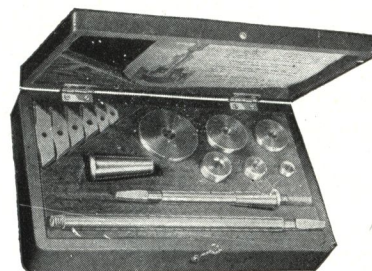


Fig. 5074. Showing Set Complete

Pump Valve Reseating Machines

The Improved Dexter

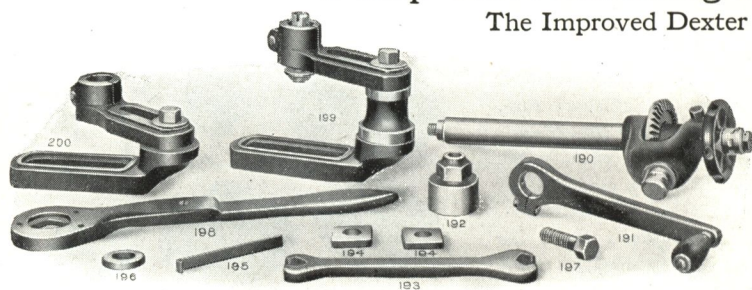


Fig. 5080. Pump Outfit D-H-6

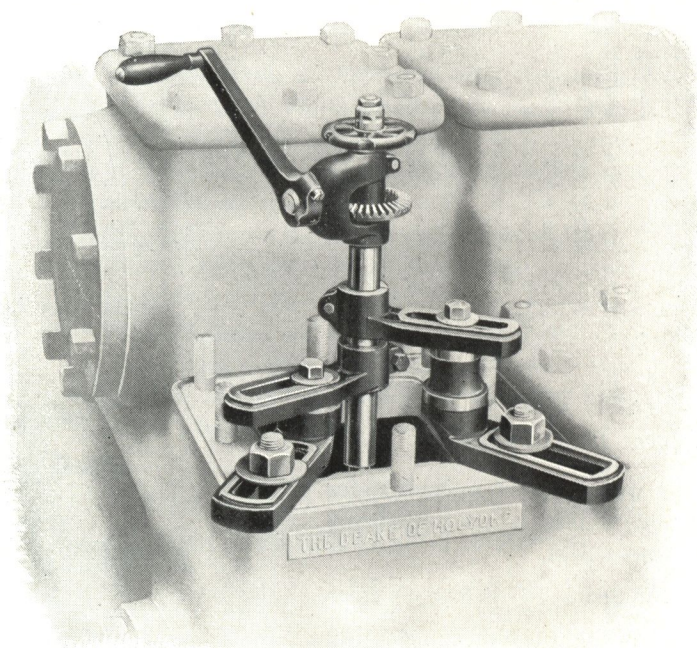
This illustrates Pump Outfit D-H-6 with all the parts complete, and is the machine assembled and shown attached to a Deane Pump in illustration below.

The extra heavy double yoke and bearing sleeve with tool shaft geared 3 to 1, make a powerful and most satisfactory outfit for recutting the seats in all types of pumps, including Worthington, Blake, Deane, Prescott, Marsh, Knowles, Gould, Warren, Snow, Cameron, Aldrich, Janesville, National, with seats 2 to 7½ inches.

The price of this outfit, complete as illustrated, but not including cutters, is 37.00, as listed below. To this price should be

added the prices of cutters required, as per list at bottom of page. This also applies to Outfit No. K-4, H-6 and N-15, listed at 22.50, 30.00 and 65.00, respectively.

Pump attachments M-4, M-6 and D-M-6, with the Pump Cutters listed, will enable owners or purchasers of the Improved Dexter Valve Reseating machines to reface the seats of all pump valves of standard makes of pumps having valves 2 to 7½ inches.



M-4, 2-3 inches, can be used with the bearing sleeve and tool shaft of a No. 4 Dexter machine. M-6, 2-4 inches, can be used with the bearing sleeve and tool shaft of a No. 6 Dexter machine. D-M-6, 2 to 7½ inches, is designed to be used with the tool shaft and bearing sleeves of the larger machine of the 6-T-L Globe Valve Reseating Machine, made since January 1, 1909.

Price of cutters required must be added to price of pump attachments.

In ordering, give diameter of pump valve stud for each cutter.

Dexter Pump Valve Reseating Machines

Price of Pump Outfits used independently of Dexter Globe Valve Machines

Outfit No.	K-4	H-6	D-H-6	N-15
Capacity for Refacing Seats, inches	2-3	2-4	2-7½	8-15
Price Without Cutters	22.50	30.00	37.00	65.00

Pump Attachments

Used With Dexter Globe Valve Reseating Machines

Attachment No.	M-4	M-6	D-M-6
Capacity for Refacing Seats, inches	2-3	2-4	2-7½
Price Without Cutters	15.00	17.00	24.00

Pump Valve Seat Cutters

Add price of Pump Cutters required to price of Pump Outfit or Attachment.

Size, inches	2	2½	3	3½	4	4½	5	5½	6
Price	12.00	12.00	12.00	15.00	15.00	15.00	18.00	18.00	18.00
Size, inches	6½	7	7½	8	10	12	14	15	
Price	22.00	22.00	22.00	30.00	50.00	65.00	75.00	80.00	

Abrasive Cloths and Papers

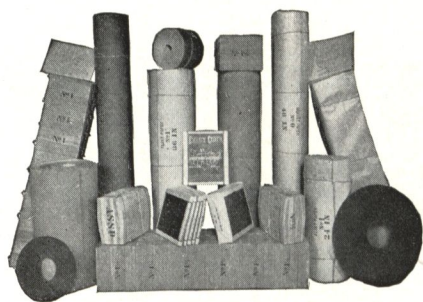


Fig. 5090. Abrasives

U. S. Brand Flint Paper
In Sheets 9 x 11 Inches

Nos.	Per Ream	Nos.	Per Ream
4-0 to 1/2	7.00	2 1/2	9.00
1	7.50	3	10.50
1 1/2	8.00	3 1/2	11.75
2	8.50	4	12.75
Assorted			8.00

Garnet Paper

In Sheets 9 x 11 Inches

Nos.	Per Ream	Nos.	Per Ream
4-0 to 1/2	7.00	2 1/2	10.00
1	7.50	3	11.00
1 1/2	8.25	3 1/2	12.50
2	9.00	4	13.50
Assorted			8.25

Emery Paper

In Sheets 9 x 11 Inches

No.	Per Ream	No.	Per Ream
3-0 to 1/2	12.50	2 1/2	18.50
1	13.75	3	22.75
1 1/2	15.00	3 1/2	26.50
2	16.75	4	30.50
Assorted			15.00

Artificial Abrasive Cloth—Carbalox

For Steel and Similar Metals. In Sheets 9 x 11 Inches

No.	Per Ream	No.	Per Ream
3-0 to 1/2	31.00	3	44.00
1	33.00	3 1/2	47.00
1 1/2	35.00	4	50.00
2	38.00	4 1/2	53.00
2 1/2	41.00	5	56.00

Artificial Abrasive Cloth—Herculundum

For Cast Iron and Similar Metals. In Sheets 9 x 11 Inches

Nos.	Per Ream	Nos.	Per Ream
3-0 to 1/2	31.00	3	44.00
1	33.00	3 1/2	47.00
1 1/2	35.00	4	50.00
2	38.00	4 1/2	53.00
2 1/2	41.00	5	56.00

Emery Cloth

In Sheets 9 x 11 Inches

Nos.	Per Ream	Nos.	Per Ream
Assorted	35.00	2 1/2 or 46	41.00
Crocus Cloth	31.00	3 or 36	44.00
FF to 1/2 or 90	31.00	3 1/2 or 24	47.00
1 or 80	33.00	4 or 16	50.00
1 1/2 or 70	35.00	4 1/2 or 14	53.00
2 or 60	38.00	5 or 12	56.00

Extra Coated Emery Paper—In Rolls. 50 Yards Long

Width Inches	Nos. FF-90 FF to 1/2	No. 80 1	No. 70 1 1/2	No. 60 2	No. 46 2 1/2	No. 36 3	No. 24 3 1/2	No. 16 4
2	1.50	1.70	1.80	1.90	2.15	2.55	2.90	3.25
3	2.00	2.25	2.40	2.60	2.90	3.50	3.90	4.40
3 1/2	2.35	2.55	2.80	2.95	3.40	4.00	4.50	5.00
4	2.60	2.90	3.20	3.35	3.75	4.50	5.00	5.65
6	3.70	4.20	4.40	4.75	5.40	6.70	7.40	8.30
8	4.95	5.45	5.80	6.30	7.10	8.65	9.80	11.10
9	5.45	6.20	6.45	7.00	7.95	9.70	10.95	12.85
10	6.00	6.70	7.10	7.70	8.70	10.65	12.15	13.70
12	7.00	7.95	8.40	9.10	10.30	12.70	14.40	16.25
15	8.95	10.10	10.70	11.55	13.15	16.10	18.20	20.55
16	9.55	10.70	11.35	12.25	13.95	17.10	19.30	21.80
18	10.60	11.95	12.65	13.65	15.55	19.10	21.65	24.40
20	11.70	13.15	13.95	15.05	17.10	21.10	23.95	27.10
24	12.75	14.75	15.75	17.00	19.50	24.00	27.50	31.00

Emery Cloth—In Rolls. 50 Yards Long

Width Inches	Nos. 3-0 to 1/2	No. 1	No. 1 1/2	No. 2	No. 2 1/2	No. 3	No. 3 1/2	No. 4	No. 4 1/2	No. 5
1 1/2	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.50	1.55	1.60
3/4	1.50	1.55	1.60	1.65	1.70	1.80	1.90	2.00	2.05	2.15
1	1.70	1.80	1.90	2.00	2.10	2.20	2.35	2.45	2.55	2.70
1 1/2	2.30	2.45	2.55	2.70	2.90	3.10	3.25	3.45	3.60	3.75
2	2.90	3.05	3.25	3.45	3.70	3.95	4.15	4.40	4.65	4.85
2 1/2	3.55	3.70	3.95	4.20	4.50	4.80	5.10	5.40	5.65	5.95
3	4.10	4.35	4.60	4.95	5.30	5.65	6.00	6.35	6.70	7.05
3 1/2	4.85	5.00	5.30	5.70	6.10	6.50	6.90	7.35	7.75	8.05
4	5.30	5.65	6.00	6.40	6.90	7.40	7.85	8.30	8.80	9.20
5	6.50	6.90	7.45	7.90	8.50	9.10	9.65	10.25	10.85	11.40
6	7.70	8.20	8.75	9.35	10.10	10.80	11.50	12.20	12.90	13.60
7	8.90	9.50	10.10	10.85	11.70	12.55	13.35	14.15	14.90	15.75
8	10.10	10.75	11.50	12.35	13.30	14.25	15.15	16.10	17.10	17.95
9	11.50	12.00	13.00	14.00	15.00	16.00	17.00	18.00	19.00	20.00
10	12.50	13.30	14.20	15.30	16.50	17.70	18.85	20.00	21.20	22.30
12	14.90	15.85	16.95	18.15	19.70	21.15	22.50	23.90	25.35	26.65
14	17.30	18.40	19.70	21.25	22.90	24.60	26.15	27.80	29.50	31.00
16	19.75	20.90	21.90	24.20	26.10	28.00	29.85	31.70	33.65	35.40
18	22.25	23.50	25.25	27.25	29.25	31.50	33.50	35.50	37.50	39.50
20	24.50	26.10	27.90	30.10	32.50	34.90	37.15	39.50	41.90	44.10
24	29.30	31.20	33.40	35.80	38.90	41.80	44.50	47.30	50.20	52.85
27	32.50	34.50	37.00	40.00	43.00	46.50	49.50	52.50	55.75	58.75

Heavy Coated for Belts

	4	6	9	14	18	20	4	6	9	14	18	20
	5.80	8.45	12.65	19.00	24.50	27.00	6.20	9.00	13.20	20.25	25.85	28.75
	6.60	9.60	14.30	21.75	27.75	30.70	7.00	10.00	15.00	22.50	28.50	32.00
	7.60	11.00	16.50	24.00	30.00	33.00	8.15	11.50	17.00	24.50	30.50	34.00
	8.60	12.50	18.50	26.50	32.50	35.50	9.00	12.50	19.00	27.00	33.00	37.00
	8.60	12.50	18.50	26.50	32.50	35.50	9.00	12.50	19.00	27.00	33.00	37.00
	8.60	12.50	18.50	26.50	32.50	35.50	9.00	12.50	19.00	27.00	33.00	37.00

400 Champion Steel Blacksmith Blower

With Adjustable Ball Bearings

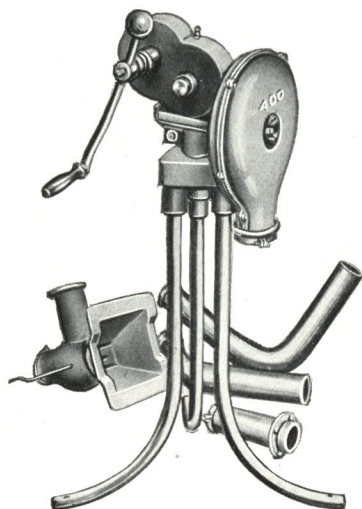


Fig. 5100. Champion 400 Blower

No. 400 $\frac{1}{4}$ has tight and loose pulleys attached to one end of the driving gear shaft for power, while the crank, when in use, is attached to the opposite end. The blower is belted direct to the main line shaft. No countershaft used.

The 400 Blower and "Whirlwind" Blast Tuyere represents in every respect the greatest value in a Blacksmith Blast Producer. Its gears, in connection with the adjustable ball bearings, are constructed from the highest grade of Special Phosphor Bronze and Tool Steel, turned and finished with special made automatic machinery, thus making the blower run without noise or lost motion.

Crank turns either way to make a blast.

Each turn of the crank produces 46 complete revolutions of the blast wheel. All blower speeds should be counted before purchasing, as high speed of the fan wing can only make a high pressure white heat blast.

The 400 Champion Steel Blacksmith Blower with the No. 400 Champion "Whirlwind" Blast Anti-Clinker Heavy Nest Tuyere Iron, Fan 12 Inches in Diameter, complete with Piping, Blower Weight 105 Pounds, Tuyere Iron 50 Pounds. 37.00

The 400 Champion Steel Blacksmith Blower is made for right or left-hand fires.

Right-hand Blowers always furnished unless otherwise specified.

No. 420 and No. 421 are the same in every particular as the "Famous 400" except that these are larger and meet a demand often required for two fires.

It is also the Blower that is often used for blowing large volumes of fresh air into mines, or exhausting foul air out of mines.

It is a very useful and valuable tool where Blowers of this immense size are necessary.

Crank turns either way to make the blast.

Each turn of the crank produces 46 complete revolutions of the fan wing.

No. 420 Champion Steel Blower, Fan 14 Inches in Diameter, with "Whirlwind" Blast Tuyere Iron and Piping Complete. Weight 165 Pounds. 45.00

No. 421 Champion Steel Blower, Fan 16 Inches in Diameter, with "Whirlwind" Blast Tuyere Iron and Piping Complete. Weight 170 Pounds. 48.00

No. 400 $\frac{1}{4}$ Champion Steel Power and Hand Blower, with "Whirlwind" Blast Anti-Clinker Heavy Nest Tuyere Iron and Piping Complete, Fan 12 Inches in Diameter. Weight 175 Pounds. 48.50

With Special 14-inch Fan, extra. 8.00

With Special 16-inch Fan, extra. 11.00

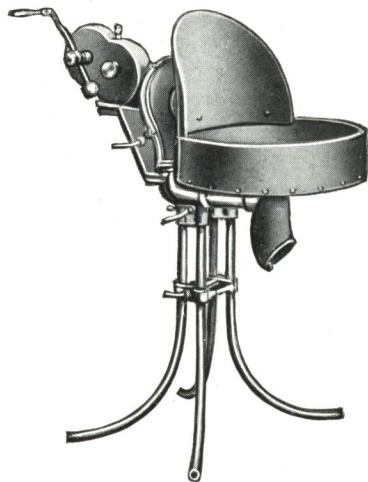


Fig. 5101. Champion No. 401

Champion Steel Rivet Forge

Adjustable Ball Bearings, Hearth 18 inches Diameter

No. 401. With Shield

No. 401 Champion Steel Rivet Forge is used by the great majority of railroads, bridge builders, boiler and structural iron workers of the world; also very desirable for garages.

Nothing approaches it for a strong positive blast. We therefore can safely guarantee it to increase the work over and above any other make of rivet forge 25 per cent. Its gearing is the "Famous 400" Champion "Patented" High Speed Spiral Gearing. It runs noiseless. It can be taken apart for transportation, and again set up in a few minutes. It will produce blasts to weld 3 $\frac{1}{2}$ to 4-inch iron in ten minutes. Crank turns either way to make the blast. Each turn of the crank produces 46 complete revolutions of the fan wing.

No. 401 Champion Steel Rivet Forge with Shield. Hearth 18 Inches in Diameter, Height 30 Inches, Fan 9 Inches in Diameter. Weight 115 Pounds. 35.00

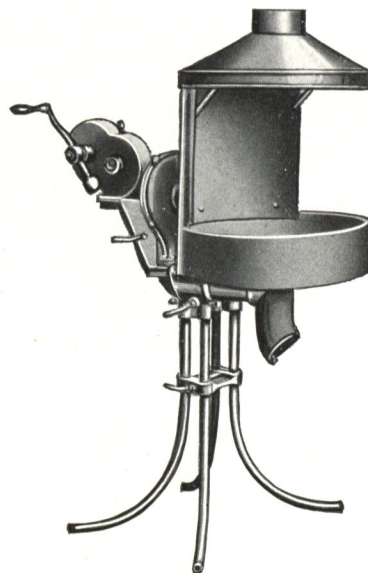


Fig. 5102. Champion No. 402

Champion Steel Toolmakers' Forge

Adjustable Ball Bearings, Hearth 18 Inches Diameter

No. 402. With Half Hood

No. 402 Champion Steel Toolmakers' Forge is similar to No. 401, the difference being the half hood, which makes this a forge for inside work for toolmakers, jewelers, bicycle repairers, tempering, tank builders, miners, prospectors, making repairs on boilers, steam and elevated railroads, and garage and oil field work.

Crank turns either way to make the blast.

Each turn of the crank produces 46 complete revolutions of the fan wing.

No. 402 Champion Steel Toolmakers' Forge with Half Hood.

Hearth 18 inches in Diameter, Height 30 Inches, Fan 9 Inches in Diameter. Weight 120 Pounds. 38.00

Champion Forges

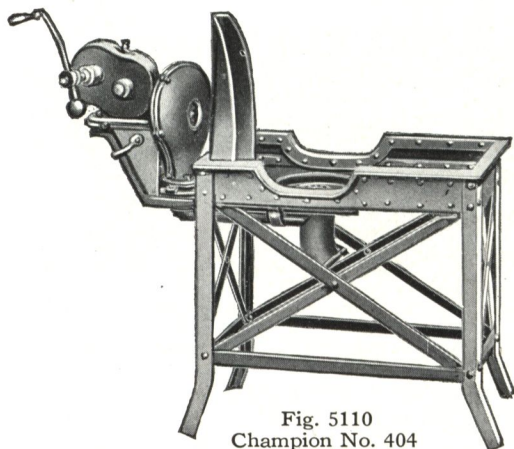


Fig. 5110
Champion No. 404

Champion Steel Rivet Forge—Adjustable Ball Bearings
Hearth 24 x 24 inches

No. 404. With Shield

No. 404 Champion Steel Rivet Forge has a 24-inch square hearth with angle steel legs riveted to hearth. In construction of machinery for operating the Blower and in connection with size of Fan, this Forge is precisely the same as No. 401.

For many kinds of work a 24-inch square Hearth Forge may be more preferable. The Hearth being larger, there is more surface for fire, coal, tools, etc.

It is a very light, stiff and practical Forge for garages, government use, stables, elevated and steam railroads, bridge and tank builders, boiler and oil field work.

The blower and all machinery can be taken off for transportation. Crank turns either way to make blast.

Each turn of the crank produces 46 complete revolutions of the fan wing.

No. 404 Champion Steel Rivet Forge with Shield, Hearth 24 x 24 Inches, Height 30 Inches, Fan 9 Inches Diameter, Weight 170 Pounds..... 45.00

Champion "Midway" Spiral-Geared Toolmakers' Forge With Cast Iron Hearth

Hearth 22 Inches Diameter, Fan 10 Inches

No. 75. With Shield

No. 75 Champion "Midway" Spiral-Geared Rivet Forge has cast iron hearth, and is supplied with the "Midway" or Cross Spiral Gearing. It is a good, strong and durable forge, and will give the best of satisfaction where a forge less expensive than the forges in the famous 400 line is wanted. It is suitable for jewelers, bicycle repairers, tempering tools, tank builders, miners, prospectors, boilermakers, elevated railroad contractors, oil field work, etc.

No. 75 Champion "Midway" Spiral-Geared Rivet Forge, with Cast Iron Hearth 22 Inches in Diameter, Height 33 Inches, Fan 10 Inches in Diameter with Shield. Weight 140 Pounds..... 30.00

No. 76. With Half Hood
(Not Illustrated)

No. 76 Champion "Midway" Spiral-Geared Forge, with Cast Iron Hearth 22 Inches in Diameter, with Half Hood. Weight 145 Pounds..... 33.00

No. 77 Champion "Midway" Spiral-Geared Forge, with Cast Iron Hearth 22 Inches in Diameter, Fan 10 Inches in Diameter, with Full Hood. Weight 150 Pounds..... 36.00



Fig. 5111. Champion No. 75
Forge with Cast Iron Hearth

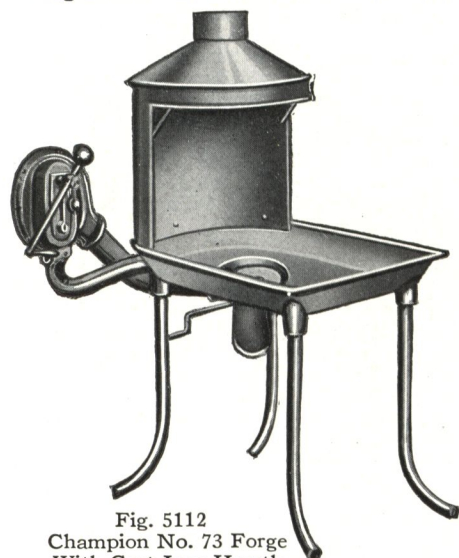


Fig. 5112
Champion No. 73 Forge
With Cast Iron Hearth

Champion Machinists' "Midway" Spiral-Geared Portable Forge With Cast Iron Hearth

Hearth 23 x 35 Inches. Fan 10 Inches Diameter

No. 73. With Half Hood

No. 73 Champion "Midway" Spiral-Geared Portable Forge with Cast Iron Hearth. Hearth 23 x 35 Inches, Fan 10 Inches in Diameter, with Half Hood. Weight 190 Pounds. 40.00

No. 74 Champion "Midway" Spiral-Geared Forge, with Cast Iron Hearth. Hearth 23 x 35 Inches, Height 30 Inches, Fan 10 Inches in Diameter, with Full Hood. Weight 200 Pounds..... 43.00

No. 72. With Shield
(Not Illustrated)

No. 72 Champion "Midway" Spiral-Geared Forge, with Cast Iron Hearth 23 x 35 Inches, Height 30 Inches, Fan 10 Inches in Diameter, with Shield. Weight 185 Pounds... 36.00

Champion Forges

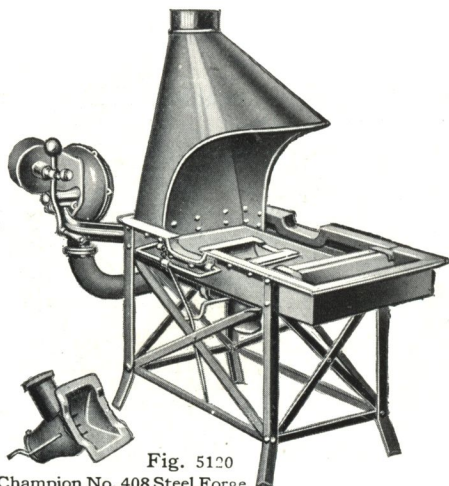


Fig. 5120

Champion No. 408 Steel Forge

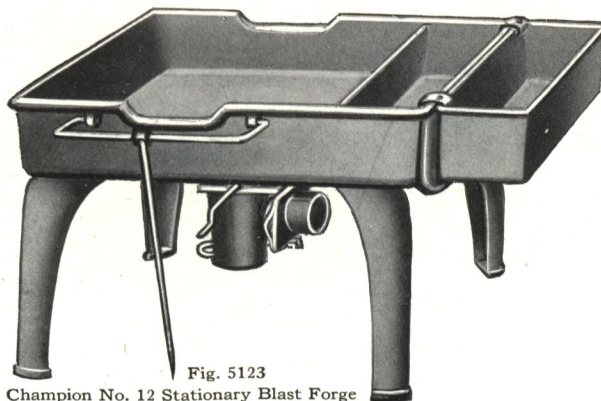


Fig. 5123

Champion No. 12 Stationary Blast Forge

Nos. 408 and 409

Nos. 408 and 409 Forges are practically the 400 Champion Steel Blower (Fig. 5100) adapted to the largest steel hearth forge manufactured. The construction of this large hearth and the No. 400 Blower combination means a well-braced and thoroughly stiff forge with steel plate on the hearth of special extra thickness. The side plates are 6 inches wide, making the hearth 6 inches deep, well braced in every respect, with angle steel, giving the blacksmith every convenience that a blacksmith hearth can require under any circumstances. While not necessary, but if desired, the hearth can be bricked to the wish of any mechanic.

Especially designed and built for large, heavy work and at the same time practical for light and medium work.

They are practical for carriage shops, plow works, horseshoers, blacksmith shops, garages, or for any style of work and are guaranteed to meet any purpose that a blacksmith can demand. Crank turns either way to make a blast.

Each Turn of the crank produces 46 complete revolutions of the blast wheel.

No. 408 Champion Steel Horseshoers' Forge with Half Hood. Hearth 30 x 36 Inches, Height 30 Inches, Fan 12 Inches in Diameter, with the No. 400 Champion "Whirlwind" Blast Anti-Clinker Heavy Nest Tuyere Iron. Weight 300 Pounds. 65.00

With Water Tank, extra. 5.00

No. 409 Champion Steel Blacksmiths' Forge. Hearth 30 x 40 Inches. Height 30 Inches, Fan 12 Inches Diameter, with No. 400 Champion "Whirlwind" Blast Anti-Clinker Heavy Nest Tuyere Iron. Weight 310 Pounds. 70.00

With Water Tank, extra. 5.00

No. 12

Nos. 11½, 12, 12½ and 13½ Champion Stationary Blast Forges are made extra heavy for all kinds of blacksmith fires—far superior to building a forge of brick or stone. These forges are made for power but can be used for hand, electric blower or bellows as well. They are supplied with the Champion Blast Gate and the No. 400 Champion "Whirlwind" Blast Anti-Clinker Heavy Nest Tuyere Iron without extra cost.

No. 11½ Champion Stationary Blast Forge. Size of Hearth over all with Water Tank 38 x 52 Inches. Height 26 Inches. Depth of Hearth 3½ Inches. Weight 350 Pounds. 30.00

Regular Half Hood, extra. 6.25

No. 12 Champion Stationary Blast Forge. Size of Hearth over all, with Water Tank 38 x 52 Inches. Height 26 Inches. Depth of Hearth 7 Inches. Weight 400 Pounds. 35.00

No. 12½ Champion Stationary Blast Forge. Size of Hearth, over all, with Water Tank 39 x 63 Inches. Height 26 Inches. Depth of Hearth 7 Inches. Weight 480 Pounds. 40.00

No. 13½ Champion Stationary Blast Forge. Size of Hearth, over all, with Water Tank 48 x 73 Inches. Height 26 Inches. Depth of Hearth 7 Inches. Weight 600 Pounds. 70.00

Canopy Hood, extra. 5.00

Regular Half Hood, extra. 6.25

The Champion Fan Blower

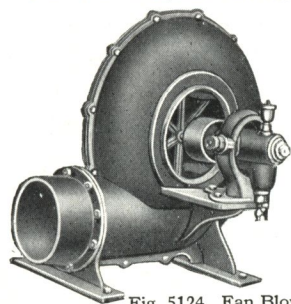


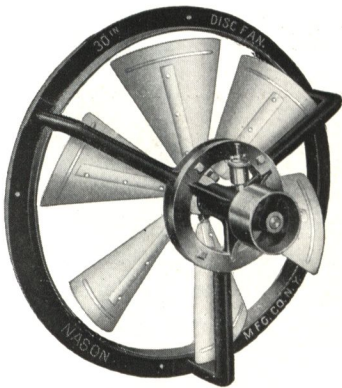
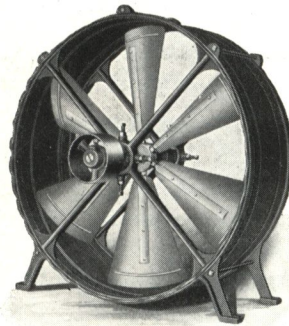
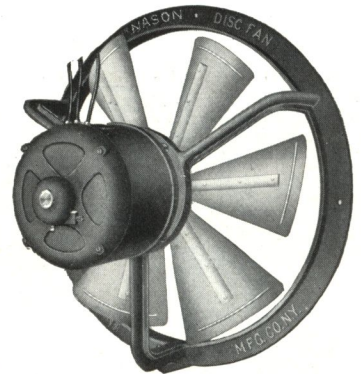
Fig. 5124. Fan Blower

The Champion Fan Blowers are built especially for use where a large volume of blast is required (instead of great pressure). They are adapted for steam boilers, puddling and heating furnaces, dry rooms, refrigerators, forge fires, etc.; also for ventilation. They are constructed in the best possible manner, with only the highest grade material and workmanship. Our table gives speeds for 2 and 4-ounce of blast per square inch, which meets usual requirements when a blower of full capacity is used, and blast pipes of proper area in proportion to length. 2-ounce pressure will be sufficient blast for steam boilers, etc., also for ventilating. 4-ounce pressure with blast pipes in right proportion will give good results on puddling and heating furnaces. The number of forge fires given in table can only be considered as a guide, as all depends on the size of fires wanted and in what location the blower is placed. The best results are obtained when blower is close to the fires, and elbows especially short turns, are avoided.

Price List with Sizes, Dimensions, Table of Speed and Capacities of the Champion Fan Blower

No. of Blowers	Price	Height in Inches	Inside Diameter of Inlet Inches	Inside Diameter of Outlet Inches	Diameter of Pulley Inches	Face of Pulley Inches	Revolutions Per Minute 2-ounce Blast for Boiler Fires	Revolutions Per Minute 4-ounce Blast for Forge Fires	No. of Forge Fires	Square Feet of Boiler Grate Surface Supplied by Blower
1½	12.00	12	4½	3½	2⅞	1¾	3300	4500	1	3½
2	15.00	15	5	4	3	2	3000	4000	2	5
3	20.00	18	5¾	4¾	3	2½	2600	3600	4	6
4	25.00	21½	6½	5¾	3½	2½	2300	3200	6	8
5	33.00	25½	7½	7½	4¼	3½	1928	2682	9	10
6	44.00	29¼	9	9	5⅞	4	1638	2279	15	14
7	55.00	34	10½	10½	6	4¾	1410	1961	18	20
8	70.00	40	12	12	6¾	5¼	1194	1662	24	27
9	90.00	45	14	14	8	6¼	1018	1417	30	36
10	150.00	50	16	16	9	8	878	1234	40	48
11	200.00	57	18	18	10	9	766	1065	52	62

Disc Fans

Fig. 5130. Type B
Belt-driven FanFig. 5131. Type A
Belt-driven FanFig. 5132. Type B
Motor-driven Fan

Belt-Driven Fans—Type A and B

Diameter of Fan Inches	Type "A"	Type "B"	Pulley Inches	Usual Speed	Capacity C. F. M. at Max. Speed Shown	Approximate Weight, Pounds
12	19.00	19.00	2 x 1 1/4	1000 to 1200	1.500	23
18	26.00	24.50	3 x 1 1/2	800 to 1000	3.700	29
24	32.00	30.00	4 x 2	600 to 800	5.900	55
30	42.00	38.00	5 x 3	500 to 700	10.300	81
36	49.00	46.00	6 x 3	500 to 700	18.700	120
42	61.00	58.00	7 x 4	400 to 600	24.500	150
48	75.00	.....	8 x 4	300 to 600	35.500	180
54	93.00	.....	9 x 5	300 to 500	40.600	220
60	115.00	.....	10 x 6	200 to 500	53.000	280

Note: Belt Fans are always set to rotate to the right (or clockwise) when facing the pulley and exhaust the air from the pulley end, unless otherwise ordered.

Vertical Fans—The above may be furnished to operate in a vertical position—blowing up or down. If so desired, add 10 per cent. to above prices.

Motor-Driven Fans—Type A and B

Direct Current—115-230 Volt

Diameter of Fan Inches	Type "A"	Type "B"	Extra for Regular Rheo. Net	Approximate Speed	Capacity Cubic Feet Per Minute	Approximate Weight
18	110.00	98.00	3.00	1000	3.720	83
24	140.00	120.00	3.00	800	5.900	119
30	165.00	140.00	3.00	500	7.400	175
30	180.00	155.00	3.00	550	8.150	180
36	195.00	170.00	4.00	500	13.400	250
36	215.00	185.00	4.00	550	16.000	280
42	250.00	240.00	7.50	400	16.400	370
42	300.00	280.00	7.50	450	18.400	391
48	330.00	.....	10.00	400	23.750	540
48	390.00	.....	10.00	450	27.000	560
54	420.00	.....	10.00	400	32.600	600
60	490.00	.....	10.00	350	37.200	660
60	540.00	.....	12.00	400	42.500	810

The above prices include starting rheostats—if regulating rheostats are desired add extra net prices given in column.

Fans can be furnished to run with shafts in a vertical position blowing upward with motor below. If so desired add 10 per cent. to the above prices.

If motors are desired wound for 115 volts, 220 volts or 500 volts, orders should so specify.

Alternating Current—60 Cycle, 110 and 220 Volts—Type A and B

Two and Three Phase				Single Phase			
Diam. of Fan, Inches	Type "A"	Type "B"	Capacity Cubic Feet Per Min.	Approximate Speed	Diam. of Fan, Inches	Type "A"	Type "B"
18	105.00	98.00	3.300	1140	18	145.00	140.00
24	130.00	120.00	5.900	690	24	170.00	160.00
30	185.00	165.00	7.400	575	30	210.00	200.00
36	210.00	195.00	13.400	575	36	275.00	265.00
42	255.00	240.00	16.400	490	42	300.00	290.00
48	350.00	.....	23.700	420	48	400.00	.....
54	500.00	.....	28.600	380	.....	.....	.....
60	610.00	.....	37.200	340	.....	.....	.....

For 440 and 500 volts, above prices apply on 42-inch to 60-inch. For 18-inch to 36-inch add 10 per cent.

The above can be furnished to run with shafts in a vertical position blowing upwards with the motor below. If so desired add 10 per cent. to the above prices.

If motors are desired wound for 110 volts, 220 volts or 440 volts, orders should so specify.

Gasoline Braziers

No. 11 Gasoline Brazier



Fig. 5140. No. 11 Brazier

The No. 11 Brazier is recommended for medium and light work, such as brazing bicycle tubing, tempering and annealing. The tank has a capacity of 10 gallons and is constructed of heavy steel with welded seams and galvanized. Air pressure is quickly secured by a large compound brass pump. Pressure gauge and air valves are fitted to the tank, which is tested for a working pressure of 75 pounds. The two powerful burners are easily regulated, producing intensely hot blue flame.

No. 11, complete, as illustrated	52.80
Brazing Head, complete with Valve	28.00
Tank, complete with Gauge, Pump and Filler Plug	38.40
Burners only	9.20

No. 105 Gasoline Brazier

Designed for heavy brazing, requiring an intensely hot, concentrated flame. The burner is made with a powerful generator, producing a blast flame 2 inches in diameter at the burner. A swivel connection enables the user to point the flame in any direction, as indicated. An adjustable brazing tripod is furnished with the complete brazier.

No. 105, complete with Stand and Pump	60.00
Brazier, complete without Brazing Stand	50.40
Brazing Stand complete	12.00
Burners only	22.00
Tank complete with Pump, Gauge and Filler Plug	50.40

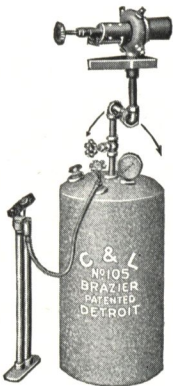


Fig. 5141
No. 105 Brazier



Fig. 5141A. Tripod

No. 100 Brazier

For straightening automobile frames and axles, engine drive-arms, brazing bicycle and motor cycle frames, taking dents out of steel plates on boilers, and for melting lead, zinc or babbitt, tempering tools and for all purposes where an intense heat is required. Burner is large and powerful. A brazed 10-gallon steel tank is furnished, which is connected to the burner by 6 feet of flexible hose, enabling the operator to place the burner in any position desired. The tripod, which is adjustable, will be found convenient to hold the burner in position. The burner sets into the tripod and may be quickly and easily removed.

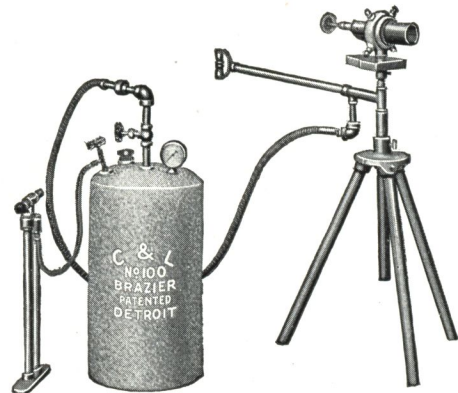


Fig. 5142. No. 100 Brazier

No. 100, complete, as illustrated	100.80
Complete with Double Burner Head	126.00
Complete with Two Single Burners Attached to Separate Lengths of Hose, Two Tripods and Brazing Stand	137.20

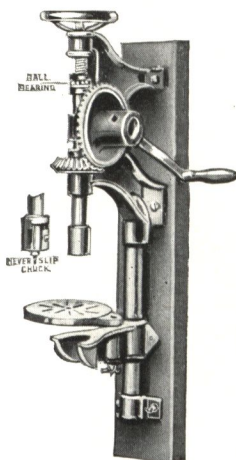


Fig. 5150. No. 92

Champion Drills

No. 92 Hand-Feed Post Drill

Made With Ball Bearings

No. 92 Champion Hand-Feed Post Drill represents a plain drill without fly wheel.

It has End Thrust Ball Bearings.

All Bearings are ground out of the solid metal. No babbitt is used on this drill. Drills to the center of a 12-inch circle. Drills holes from 0 to $\frac{3}{4}$ inch.

The End Thrust Ball Bearings save 20 to 50 per cent. in power and are made from the highest grade of lathe-turned tool steel.

It has lathe-turned and slotted table.

Spindle $\frac{7}{8}$ inch in diameter; has up-and-down run of 3 inches.

Champion Drills are all machine-jigged, therefore all parts are absolutely standard and interchangeable.

Spindle bored to take in $\frac{1}{2}$ -inch Straight Shank Drill Bits. If especially ordered to take in $\frac{5}{8}$ inch or $\frac{3}{4}$ inch.

No. 92 Champion Hand-Feed Post Drill, weight 65 pounds 6.00

No. 101 Self-Feed Blacksmith Post Drill

Made With Ball Bearings

No. 101 Champion Post Drill is a first-class tool for light work.

Spindle has End Thrust Ball Bearings.

All bearings are ground out of the solid metal. No babbitt used on this drill. Drills to the center of 12-inch circle. Drills from 0 to $\frac{3}{4}$ -inch hole.

The End Thrust Ball Bearings save 20 to 50 per cent. in power and are made from the highest grade of lathe-turned tool steel.

Has automatic self-feed.

It has lathe-turned and slotted table.

Spindle $\frac{7}{8}$ inch in diameter; has up-and-down run of 3 inches.

Champion Drills are all machine jigged, therefore all parts are absolutely standard and interchangeable.

Spindle bored to take in $\frac{1}{2}$ -inch Straight Shank Drill Bits. If especially ordered to take in $\frac{5}{8}$ inch or $\frac{3}{4}$ inch.

No. 101 Champion Self-Feed Blacksmith Post Drill,
weight 80 pounds..... 7.00

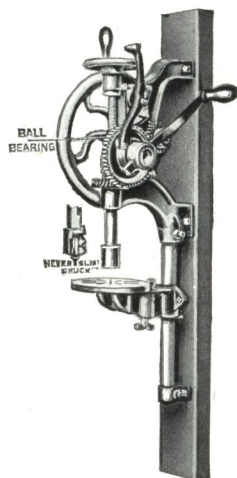


Fig. 5151. No. 101

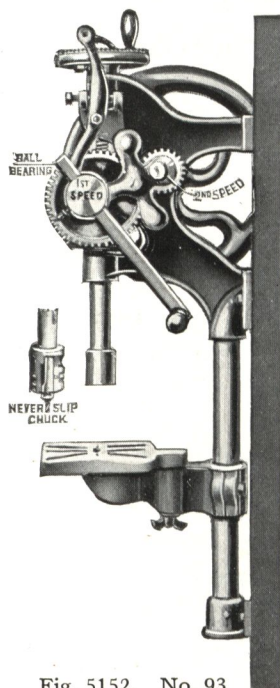


Fig. 5152. No. 93

No. 93 Self-Feed Blacksmith Post Drill

Made With Ball Bearings

No. 93 Champion Self-Feed Blacksmith Post Drill is a high grade up-to-date back-geared drill, with double journal bearings to all gears.

It has two speeds.

Spindle has End Thrust Ball Bearings.

All bearings are ground out of the solid metal. No babbitt used on this drill. Drills to the center of a 15-inch circle. Drills from 0 to $1\frac{1}{4}$ -inch hole.

The End Thrust Ball Bearings save 20 to 50 per cent. in power and are made from the highest grade of lathe-turned tool steel.

Has automatic self-feed.

It has lathe-turned and slotted table.

Spindle $1\frac{1}{8}$ inches in diameter; has up-and-down run of 3 inches.

Champion Drills are all machine jigged, therefore all parts are absolutely standard and interchangeable.

Spindle bored to take in $\frac{1}{2}$ -inch Straight Shank Drill Bits. If specially ordered to take in $\frac{5}{8}$ inch or $\frac{3}{4}$ inch.

No. 93 Champion Self-Feed Blacksmith Post Drill, weight 125 pounds 10.00

Extra for Tight and Loose Pulleys, 9 inches in diameter, 2-inch

Face for Power; speed 250 R. P. M..... 3.00

U. S. Electrically Driven Tools

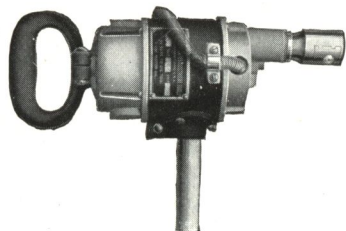


Fig. 5160. Type B Drill

Type B Drills

Dimensions, 4 x 13 Inches; Speed, 900 R. P. M.

Trade No.	Voltage	Price Each
078751	110 Direct Current	48.00
078752	220 Direct Current	48.00
078753	110 Alternating Current	49.00
078754	220 Alternating Current	49.00

Weight of above drills, 9 pounds; will hold drills from 0 to $\frac{1}{4}$ -inch.

Complete with chuck, flexible cable and attachment plug. Attach to any incandescent lamp socket.

Air cooled, very handy for small holes, such as oil holes, drilling lagging pin holes, etc.

Type G Drills

Dimensions, 6 x 18 $\frac{1}{2}$ Inches; Speed, 180 R. P. M.

Trade No.	Voltage	Price Each
078755	Direct Current 110	120.00
078756	220 Direct Current	120.00
078757	110 Alternating	125.00
078758	220 Alternating	125.00

Weight of above drills, 38 pounds; will hold drills from 0 to 1 $\frac{1}{4}$ inches.

The drill is removed from its socket by means of screwing collar on screw feed flush with top of drill. It is regularly equipped with a No. 3 Morse taper.

Drill is run off the ordinary incandescent lamp socket.

Type JK Grinder

1 Horse-power, 2400 R. P. M.

Trade No.	Voltage	Price Each
078759	110 Direct Current	98.00
078760	220 Direct Current	98.00
078761	110 Alternating Current	110.00
078762	220 Alternating Current	110.00

Dimensions, 7 $\frac{1}{2}$ x 15 $\frac{1}{2}$ inches; size of wheel, 10 x 1 inch face; weight, 87 pounds.

Type M Grinders

2 Horse-power, 2050 R. P. M.

Trade No.	Voltage	Price Each
078763	110 Direct Current	145.00
078764	220 Direct Current	145.00

Dimensions, 8 $\frac{1}{2}$ x 18 $\frac{1}{2}$ inches; size of wheel, 12 x 1 $\frac{1}{4}$ inches; weight, 120 pounds.

Especially adapted for heavy parallel grinding such as rolls, journals, and surface grinding. It can also be used in lathe, planer, or boring mill.

Be sure to specify when grinder is to be used vertically. The angle plate is bolted on tool post rest of lathe. It has a vertical adjustment of 5 inches. Cone bearings adjustable to wear and dust-proof.

Type HL Grinders

Combination Center and Internal

Trade No.	Voltage	Price Each
078765	Direct Current	80.00
078766	Alternating Current	85.00

Weight, 24 pounds; $\frac{1}{4}$ horse-power; size wheel, 1 inch; speed 18,000 R. P. M.

The bearings are adjustable to wear and are dust-proof.

Made for 50 to 250 volts.

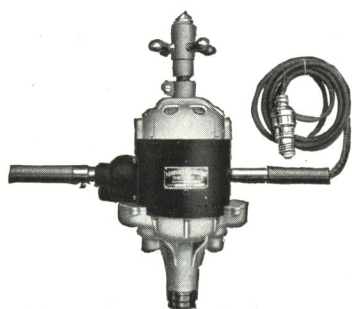
Will grind $\frac{1}{2}$ inches deep, or deeper if required; emery wheel for center grinding,6 x $\frac{3}{8}$ x $\frac{1}{2}$ inch.

Fig. 5161. Type G Drill

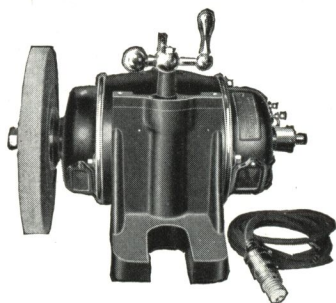


Fig. 5162. Type JK Grinder

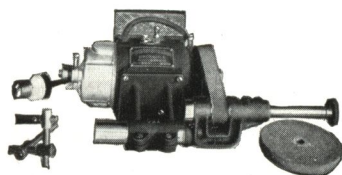


Fig. 5163. Type HL Grinder

Spring Hammer Drill

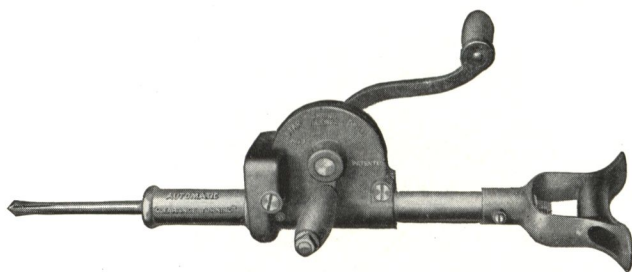


Fig. 5170. Spring Hammer Drill

An Automatic Tool Operated by Hand for Drilling Holes in Brick, Concrete and Stone

Drill, without Points	15.00
A Set of 5 S-H Drill Points, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, 1-inch, per set	5.84
A Set of 5 S-H Drill Points, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$ -inch, per set	3.70
A Complete Set of S-H Drill Points, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$ and 1-inch, per set	8.72

Spring Hammer Drill Points



Fig. 5171. S-H Drill Point

Diam. of Hole Drilled, ins.	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1
Price, per dozen	8.50	8.50	8.50	9.00	10.00	12.00	14.00	16.00	18.00
Depth of Hole, inches	2	$3\frac{1}{2}$	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	5	5	5

Longer Lengths—Price Per Dozen

Diameter, inches	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1
Length, 8 inches	8.25	8.25	8.25	8.70	9.65	11.65	13.70	15.30	17.00
Length, 12 inches	8.50	8.50	8.50	9.00	10.00	12.00	14.00	16.00	18.00
Length, 18 inches	11.00	11.00	11.00	11.50	12.50	15.00	17.50	20.00	22.50
Length, 24 inches	13.50	13.50	13.50	14.00	15.00	17.50	20.00	22.50	25.00

Fascut Star Drills, Points Milled—Per Dozen

Diam. of Drill, inches.	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$
Length, 8 inches	8.25	8.25	8.25	8.70	9.65	11.65	13.70
Length, 12 inches	8.50	8.50	8.50	9.00	10.00	12.00	14.00
Length, 18 inches	11.00	11.00	11.00	11.50	12.50	15.00	17.50
Length, 24 inches	13.50	13.50	13.50	14.00	15.00	17.50	20.00
Diam. of Drill, inches.	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$	
Length, 8 inches	15.30	17.00	24.00	30.00	40.00	50.00	
Length, 12 inches	16.00	18.00	24.00	30.00	40.00	50.00	
Length, 18 inches	20.00	22.50	28.00	35.00	45.00	56.00	
Length, 24 inches	22.50	25.00	32.00	40.00	50.00	62.00	
Diam. of Drill, inches.	$1\frac{5}{8}$	$1\frac{3}{4}$	$1\frac{7}{8}$	2	$2\frac{1}{4}$	$2\frac{1}{2}$	
Length, 12 inches	60.00	75.00	90.00	105.00	135.00	165.00	
Length, 18 inches	66.00	81.00	97.00	112.00	145.00	175.00	
Length, 24 inches	72.00	87.00	104.00	120.00	165.00	195.00	

Fascut Drills have five milled cutting edges—the old style has only four. Four-Point Star Drills, points forged, furnished at same price and in same sizes as above.



Fig. 5172

Fascut Star Drill. Points milled. For brick, stone and concrete.



Fig. 5173

Star Drill Wrench. For use with drills $\frac{1}{4}$ to 1 inch.
Per dozen

Sebco Extension Drill Heads

For Brick and Soft Stone

The drill heads are threaded to fit any gas pipe, which serves as a handle. The heads are of the strongest yet lightest construction, making them ideal for carrying in a tool kit. Quite a range of sizes can be so carried, as they weigh practically nothing.

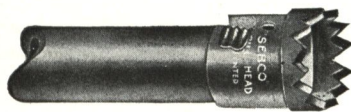


Fig. 5174. Drill Head

Diameter Cutting Edge, inches	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$	$1\frac{3}{4}$
Known as No.	2	3	4	5	5a	6	6a	7	7a
Size Pipe for Handle, inches	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$	1
Price, per dozen	3.00	3.00	3.00	3.00	3.60	4.20	7.50	9.00	10.50
Diameter Cutting Edge, inches	2	$2\frac{1}{4}$	$2\frac{1}{2}$	$2\frac{3}{4}$	3	$3\frac{1}{4}$	$3\frac{1}{2}$	$3\frac{3}{4}$	4
Known as No.	8	9	9a	10	10a	11	11a	11b	12
Size Pipe for Handle, inches	1	1	1	1	1	$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{1}{4}$
Price, per dozen	12.00	18.00	22.00	27.00	31.00	36.00	40.00	44.00	48.00

Plain and Ratchet Braces

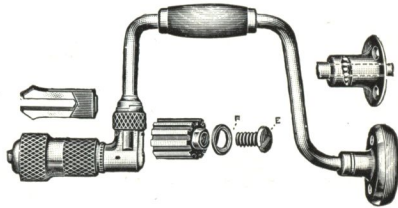


Fig. 5180. Ratchet Brace

Ratchet Brace

Ball bearing head and chuck with powerful grip. Master chuck has forged steel jaws that conform to the shape of the bit held, whether square, taper or round from $\frac{1}{8}$ to $\frac{1}{2}$ inch. Boxed ratchet, cocobolo wood and highly nickeled metal parts, including steel-clad head.

No.	770	771	772	773	774
Sweep, inches....	14	12	10	8	6
Per dozen.....	36.50	34.50	32.50	31.00	31.00

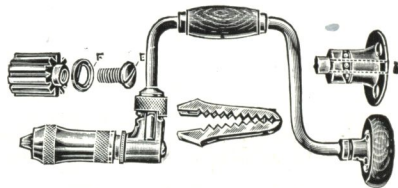


Fig. 5182. Ratchet Brace

Ratchet Brace

Ball bearing head. Free acting sweep handle; patent non-loosening screw holding chuck to sweep. Cocobolo wood and polished and nickeled metal parts. Barber chuck with forged steel alligator jaws.

No.	30	31	32	33	34
Sweep, inches....	14	12	10	8	6
Per dozen.....	29.50	27.50	25.50	24.00	24.00

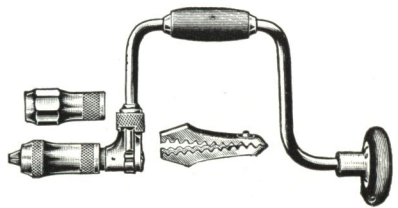


Fig. 5184. Barber Improved Ratchet Brace Open Ratchet

Barber Improved Ratchet Brace Open Ratchet

A popular ratchet brace at moderate price. Metal parts polished and nickled. Head and handle of stained hardwood. Steel rings inserted in sweep handle, which is held in place by pressed steel bolsters. Alligator jaws of malleable iron.

No.	421	422	423
Sweep, inches....	12	10	8
Per dozen.....	16.50	16.00	15.50

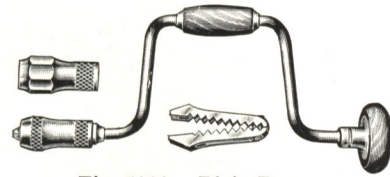


Fig. 5181. Plain Brace

Plain Brace

Polished and nickeled steel; stained hardwood. Brass rings inserted in sweep handle. Forged steel alligator jaws.

No.	220	221	222	223
Sweep, inches....	14	12	10	8
Per dozen.....	14.00	13.00	12.00	11.50

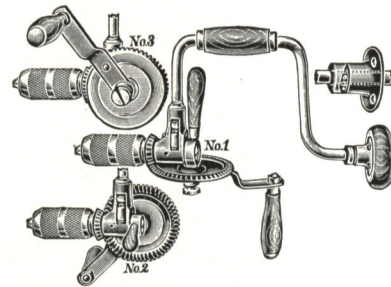


Fig. 5183. Drill Brace

Drill Brace

Best grade of ball bearing, ratchet brace with 10-inch sweep and master chuck. Improved ratchet; dogs may be thrown out of mesh simultaneously and permit tool to be used as a breast drill.

Drilling attachment affixed or detached quickly and with ease; may be swiveled into any one of 3 positions, Nos. 1, 2 and 3 as shown in illustration.

Fig. 5183. No. 192, per dozen..... 50.00

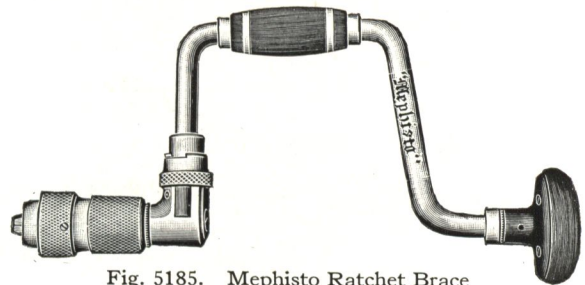


Fig. 5185. Mephisto Ratchet Brace

Mephisto Ratchet Brace

The sweep, socket ratchet and thimble are steel. Jaws are drop forgings made of a special steel, carefully machined and tempered and will hold and drive from the smallest twist drill, as used in such tools, up to $\frac{1}{2}$ inch round, straight or taper shank drills and bits; also any square taper shank bits up to and including large expansive bits.

Sweep, inches....	8	10	12	14
Per dozen.....	35.50	37.50	39.50	41.50

Breast and Hand Drills

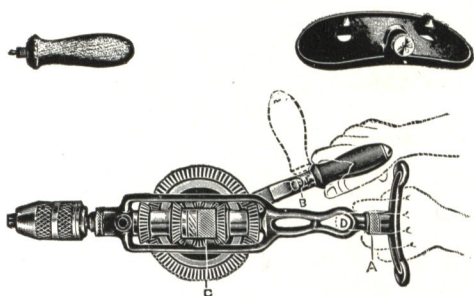


Fig. 5190. Breast Drill

Breast Drill

Ratchet; stained hardwood handles. Malleable iron, black frame, large gear red, other metal parts nickeled. Auxiliary breastplate. Adjustable crank handle. Positive ratchet has four actions or no action. Instantly changeable speeds. Double cut gears, ball thrust bearing, 3-jaw star chuck with protected springs; holds round shanks 0 to $\frac{1}{2}$ -inch. Length, $17\frac{1}{2}$ inches.

No. 97. Price..... 8.00

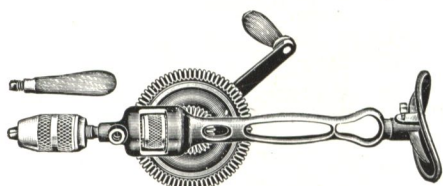


Fig. 5192. Breast Drill

Breast Drill

Stained hardwood handles, malleable iron frame; no nickeled parts.

Instantly changeable speed from $1\frac{1}{2}$ to 1 and 4 to 1; cut gears, small gears of steel; auxiliary side handle.

Chuck of Star pattern with 3 jaws operated by springs that are protected from injury and will not get out of order. Holds round shanks from 0 to $\frac{1}{2}$ -inch in diameter. Length, $17\frac{1}{2}$ inches.

No. 2100. Price, per dozen..... 42.00

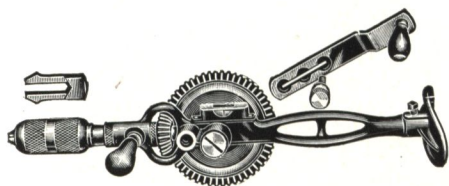


Fig. 5194. Breast Drill

Breast Drill

Tropical wood handle. Malleable iron, black frame, large gear and breastplate green, other metal parts nickeled. Breastplate adjustable, level attachment, cut gears, ball bearings throughout; adjustable crank radius 4 to 6 inches. Changeable speed, 2-jaw chuck with M. F. master jaws taking round shanks $\frac{1}{8}$ to $\frac{1}{2}$ inch; all bit stock and expansive bit shanks and No. 1 Morse taper bits. Length, $17\frac{1}{2}$ inches.

No. 12. Price, per dozen..... 40.00

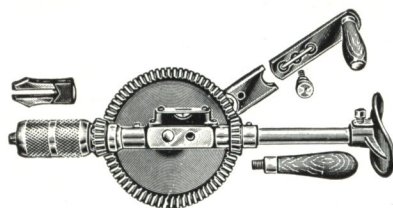


Fig. 5191. Breast Drill

Breast Drill

Tropical wood handles. Solid steel main stock; large gear and breastplate red, other metal parts nickeled; breastplate adjustable, level attachment; cut gears speeded $4\frac{1}{2}$ to 1; ball thrust bearing, adjustable crank, radius $5\frac{1}{2}$ to 7 inches, two-jaw master chuck. Length, 15 inches.

No. 13. Price, per dozen..... 55.00



Fig. 5193. Hand Drill

Hand Drill

Cocobolo handles, malleable iron frame black enameled, other metal parts nickeled. Hollow end handle with 8 wood boring points. Removable side grip handle. Cut gears, idler gear, ball thrust bearing, 3-jaw chuck; capacity 0 to $\frac{3}{16}$ inch. Large gear has wide rim and small gears are steel. Length, $12\frac{1}{2}$ inches.

No. 5. Price, per dozen..... 24.00

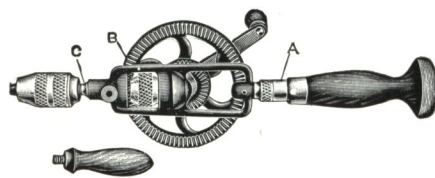


Fig. 5195. Hand Drill

Hand Drill

Stained hardwood handle, malleable iron frame; large gear painted red, other metal parts nickeled. Hollow end handle quickly detachable with receptacle for holding twist drills up to capacity of chuck. Removable side grip handle. Speed instantly changeable. Pinion and shifting device inclosed. Cut gears, small gears of steel. Ball thrust bearing, 3-jaw Star chuck with springs protected from injury. Takes drills 0 to $\frac{3}{8}$ inch. Length, $15\frac{1}{4}$ inches.

No. 980. Price, per dozen..... 40.00

Hercules Pipe Burring Reamers



Fig. 5200. Burring Reamer
With 1/2 Inch Diameter Round Shank



Fig. 5201. Burring Reamer
With Brace Bit Shank

Description

These tools are used for removing the burr from the inside of pipe, which will make a gain of about 20 per cent. in pipe capacity.

They are often used in electric conduit work and are handy for many other purposes. They are carefully ground—will not chatter when cutting and will keep sharp a long time.

List of Sizes and Prices

Order by the No.	Size at Large End	Size at Point	Sizes of Pipe that each Tool will Ream Inches	Style of Shank	Price Each
0	1 3/16	3/16	1/8, 1/4, 3/8, 1/2, 3/4, 1	Bit Brace	1.25
1	1 1/2	7/32	1/8, 1/4, 3/8, 1/2, 3/4, 1, 1 1/4	Bit Brace	1.50
10	1 1/2	7/32	1/8, 1/4, 3/8, 1/2, 3/4, 1, 1 1/4	1/2" diam. Round	1.50
2	2 3/16	5/16	1/4, 3/8, 1/2, 3/4, 1, 1 1/4, 1 1/2, 2	Bit Brace	3.00

Hercules Reamer Handle



Fig. 5202. Reamer Handle

A strong handle especially designed for Hercules Burring Reamers, but well adapted for almost any bit brace shank tool.

Length over all, 14 inches; weight, 1 1/8 pounds.

Price Each..... .75

Burring Reamers

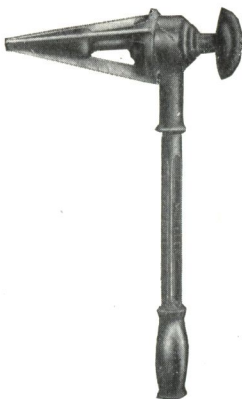


Fig. 5203. Ratchet Handle



Fig. 5204. Bit Brace Pattern
Range, 3/8 to 1 1/4 inch, inclusive
Each..... 2.50



Fig. 5205. Plain Handle

These are simple, handy and durable tools for removing burrs from the ends of wrought iron and steel pipe. With these tools the burr is entirely removed and not spread.

With Ratchet, range 3/8 to 1 1/4 inch, inclusive, each.....	5.00
With Ratchet, range 3/8 to 3 inch, inclusive, each.....	7.50
Without Ratchet, range 3/8 to 3 inch, inclusive, each.....	6.00

Note: Ratchet Handle will be furnished unless ordered otherwise.

Taper Shank Twist Drills

Carbon Steel and High Speed Steel



Fig. 5210. Taper Shank Twist Drill

Diameter Inch	Decimal Equivalent	Price Each		Length Over All Inches	Standard Taper Shank No.	Diameter Inches	Decimal Equivalent	Price Each		Length Over All Inches	Standard Taper Shank No.
		Carbon Steel	High Speed Steel					Carbon Steel	High Speed Steel		
$\frac{1}{16}$	.0625	.35	.90	$3\frac{7}{8}$	1	$\frac{3}{16}$	.8906	2.60	5.15	$10\frac{5}{8}$	2
$\frac{3}{32}$	.0781	.40	.90	$4\frac{1}{8}$	1	$\frac{1}{8}$	.9062	2.60	5.15	$10\frac{5}{8}$	2
$\frac{1}{8}$	.0937	.40	.90	$4\frac{1}{2}$	1	$\frac{5}{16}$	.9219	2.75	5.50	$10\frac{3}{4}$	3
$\frac{5}{16}$	.1094	.45	.90	$4\frac{3}{4}$	1	$\frac{3}{8}$	.9375	2.75	5.50	$10\frac{3}{4}$	3
$\frac{3}{8}$	.1250	.45	.90	$5\frac{1}{8}$	1	$\frac{7}{16}$	.9531	2.90	5.90	$10\frac{7}{8}$	3
$\frac{7}{16}$	.1406	.45	.90	$5\frac{3}{8}$	1	$\frac{1}{2}$	.9687	2.90	5.90	$10\frac{7}{8}$	3
$\frac{9}{16}$	.1562	.45	.90	$5\frac{3}{8}$	1	$\frac{5}{8}$	.9844	3.00	6.25	11	3
$\frac{11}{16}$	.1719	.50	.90	$5\frac{3}{4}$	1	1	1.0000	3.00	6.25	11	3
$\frac{3}{4}$	.1875	.50	.90	$5\frac{3}{4}$	1	$1\frac{1}{16}$	1.0156	3.20	6.75	$11\frac{1}{8}$	3
$\frac{5}{8}$	.2031	.55	1.00	6	1	$1\frac{1}{8}$	1.0311	3.20	6.75	$11\frac{1}{8}$	3
$\frac{11}{8}$	.2187	.55	1.00	6	1	$1\frac{3}{16}$	1.0469	3.40	7.25	$11\frac{1}{4}$	3
$\frac{13}{16}$	.2344	.60	1.10	$6\frac{1}{8}$	1	$1\frac{1}{4}$	1.0625	3.40	7.25	$11\frac{1}{4}$	3
$\frac{7}{8}$	.2500	.60	1.10	$6\frac{1}{8}$	1	$1\frac{5}{8}$	1.0781	3.60	7.75	$11\frac{1}{2}$	3
$\frac{15}{16}$	.2656	.65	1.20	$6\frac{1}{4}$	1	$1\frac{3}{2}$	1.0937	3.60	7.75	$11\frac{1}{2}$	3
1	.2812	.65	1.20	$6\frac{1}{4}$	1	$1\frac{7}{8}$	1.1094	3.80	8.25	$11\frac{3}{4}$	3
$1\frac{1}{8}$	.2969	.70	1.30	$6\frac{3}{8}$	1	$1\frac{1}{2}$	1.1250	3.80	8.25	$11\frac{3}{4}$	3
$1\frac{1}{4}$	.3125	.70	1.30	$6\frac{3}{8}$	1	$1\frac{9}{8}$	1.1406	4.00	8.90	$11\frac{7}{8}$	3
$1\frac{1}{2}$	.3281	.75	1.40	$6\frac{1}{2}$	1	$1\frac{5}{4}$	1.1562	4.00	8.90	$11\frac{7}{8}$	3
$1\frac{3}{4}$	.3437	.75	1.40	$6\frac{1}{2}$	1	$1\frac{11}{8}$	1.1719	4.20	9.50	12	3
$1\frac{5}{8}$	.3594	.80	1.50	$6\frac{3}{4}$	1	$1\frac{3}{4}$	1.1875	4.20	9.50	12	3
$1\frac{7}{8}$	.3750	.80	1.50	$6\frac{3}{4}$	1	$1\frac{7}{4}$	1.2031	4.40	10.15	$12\frac{1}{8}$	3
$1\frac{9}{8}$	.3906	.85	1.65	7	1	$1\frac{9}{2}$	1.2187	4.40	10.15	$12\frac{1}{8}$	3
$1\frac{11}{8}$	.4062	.85	1.65	7	1	$1\frac{5}{4}$	1.2344	4.50	10.75	$12\frac{1}{2}$	3
$1\frac{13}{8}$	.4219	.90	1.75	$7\frac{1}{4}$	1	$1\frac{3}{2}$	1.2500	4.50	10.75	$12\frac{1}{2}$	3
$1\frac{15}{8}$	.4375	.90	1.75	$7\frac{1}{4}$	1	$1\frac{7}{4}$	1.2656	4.65	11.50	$14\frac{1}{8}$	4
$1\frac{17}{8}$	.4531	.95	1.90	$7\frac{1}{2}$	1	$1\frac{9}{4}$	1.2812	4.65	11.50	$14\frac{1}{8}$	4
$1\frac{19}{8}$	.4687	.95	1.90	$7\frac{1}{2}$	1	$1\frac{5}{2}$	1.2969	4.80	12.25	$14\frac{1}{4}$	4
$1\frac{21}{8}$	.4844	1.00	2.00	$7\frac{3}{4}$	1	$1\frac{11}{8}$	1.3125	4.80	12.25	$14\frac{1}{4}$	4
$1\frac{23}{8}$	.5000	1.00	2.00	$7\frac{3}{4}$	1	$1\frac{3}{4}$	1.3281	5.00	13.00	$14\frac{3}{8}$	4
$1\frac{25}{8}$	.5156	1.10	2.15	8	1	$1\frac{7}{8}$	1.3437	5.00	13.00	$14\frac{3}{8}$	4
$1\frac{27}{8}$	.5312	1.10	2.15	8	1	$1\frac{9}{8}$	1.3594	5.20	13.75	$14\frac{1}{2}$	4
$1\frac{29}{8}$	.5469	1.20	2.25	$8\frac{1}{4}$	1	$1\frac{5}{4}$	1.3750	5.20	13.75	$14\frac{1}{2}$	4
$1\frac{31}{8}$	.5625	1.20	2.25	$8\frac{1}{4}$	1	$1\frac{11}{8}$	1.3906	5.40	14.65	$14\frac{5}{8}$	4
$1\frac{33}{8}$	.5781	1.30	2.40	$8\frac{1}{2}$	2	$1\frac{13}{8}$	1.4062	5.40	14.65	$14\frac{5}{8}$	4
$1\frac{35}{8}$	.5937	1.30	2.40	$8\frac{1}{2}$	2	$1\frac{7}{4}$	1.4219	5.60	15.50	$14\frac{3}{4}$	4
$1\frac{37}{8}$	.6094	1.40	2.50	$8\frac{3}{4}$	2	$1\frac{15}{8}$	1.4375	5.60	15.50	$14\frac{3}{4}$	4
$1\frac{39}{8}$	.6250	1.40	2.50	$8\frac{3}{4}$	2	$1\frac{17}{8}$	1.4531	5.80	16.40	$14\frac{7}{8}$	4
$1\frac{41}{8}$	.6406	1.50	2.75	9	2	$1\frac{9}{4}$	1.4687	5.80	16.40	$14\frac{7}{8}$	4
$1\frac{43}{8}$	.6562	1.50	2.75	9	2	$1\frac{11}{4}$	1.4844	6.00	17.25	15	4
$1\frac{45}{8}$	.6719	1.60	3.00	$9\frac{1}{4}$	2	$1\frac{13}{4}$	1.5000	6.00	17.25	15	4
$1\frac{47}{8}$	.6875	1.60	3.00	$9\frac{1}{4}$	2	*					
$1\frac{49}{8}$	.7031	1.70	3.25	$9\frac{1}{2}$	2	$1\frac{15}{4}$	1.5156	6.30	18.15	$15\frac{1}{8}$	4
$1\frac{51}{8}$	.7187	1.70	3.25	$9\frac{1}{2}$	2	$1\frac{17}{8}$	1.5312	6.30	18.15	$15\frac{1}{8}$	4
$1\frac{53}{8}$	.7344	1.85	3.50	$9\frac{3}{4}$	2	$1\frac{19}{8}$	1.5469	6.60	19.00	$15\frac{1}{4}$	4
$1\frac{55}{8}$	.7500	1.85	3.50	$9\frac{3}{4}$	2	$1\frac{21}{8}$	1.5625	6.60	19.00	$15\frac{1}{4}$	4
$1\frac{57}{8}$	.7656	2.00	3.75	$9\frac{7}{8}$	2	$1\frac{23}{8}$	1.5781	6.90	20.00	$15\frac{3}{8}$	4
$1\frac{59}{8}$	.7812	2.00	3.75	$9\frac{7}{8}$	2	$1\frac{25}{8}$	1.5937	6.90	20.00	$15\frac{3}{8}$	4
$1\frac{61}{8}$	.7969	2.15	4.00	10	2	$1\frac{27}{8}$	1.6094	7.20	21.00	$15\frac{1}{2}$	4
$1\frac{63}{8}$	.8125	2.15	4.00	10	2	$1\frac{29}{8}$	1.6250	7.20	21.00	$15\frac{1}{2}$	4
$1\frac{65}{8}$	.8281	2.30	4.40	$10\frac{1}{4}$	2	$1\frac{31}{8}$	1.6406	7.50	22.00	$15\frac{5}{8}$	4
$1\frac{67}{8}$	.8437	2.30	4.40	$10\frac{1}{4}$	2	$1\frac{33}{8}$	1.6562	7.50	22.00	$15\frac{5}{8}$	4
$1\frac{69}{8}$	.8594	2.45	4.75	$10\frac{1}{2}$	2	$1\frac{35}{8}$	1.6719	7.80	23.00	$15\frac{3}{4}$	4
$1\frac{71}{8}$	.8750	2.45	4.75	$10\frac{1}{2}$	2	$1\frac{37}{8}$	1.6875	7.80	23.00	$15\frac{3}{4}$	4

Taper Shank Twist Drills

(Continued)

Carbon Steel and High Speed Steel

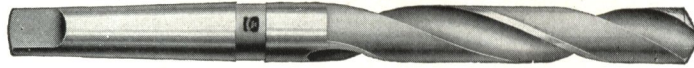


Fig. 5220. Taper Shank Twist Drill

Diameter Inches	Decimal Equivalent	Price Each		Length Over All Inches	Standard Taper Shank No.	Diameter Inches	Decimal Equivalent	Price Each		Length Over All Inches	Standard Taper Shank No.
		Carbon Steel	High Speed Steel					Carbon Steel	High Speed Steel		
1 ⁴⁵ / ₆₄	1.7031	8.10	24.00	15 ⁷ / ₈	4	2 ¹ / ₆₄	2.0156	10.20	36.25	16 ¹ / ₂	5
1 ²³ / ₃₂	1.7187	8.10	24.00	15 ⁷ / ₈	4	2 ³ / ₃₂	2.0312	10.20	36.25	16 ¹ / ₂	5
1 ⁴⁷ / ₆₄	1.7344	8.40	25.00	16	4	2 ³ / ₆₄	2.0469	10.60	37.50	17	5
1 ³ / ₄	1.7500	8.40	25.00	16	4	2 ¹ / ₁₆	2.0625	10.60	37.50	17	5
1 ⁴⁹ / ₆₄	1.7656	8.60	26.25	16 ¹ / ₈	4	2 ⁵ / ₆₄	2.0781	10.90	38.75	17	5
1 ²⁵ / ₃₂	1.7812	8.60	26.25	16 ¹ / ₈	4	2 ³ / ₃₂	2.0937	10.90	38.75	17	5
1 ⁵¹ / ₆₄	1.7969	8.80	27.50	16 ¹ / ₄	4	2 ⁷ / ₆₄	2.1094	11.20	40.00	17	5
1 ¹ / ₁₆	1.8125	8.80	27.50	16 ¹ / ₄	4	2 ¹ / ₈	2.1250	11.20	40.00	17	5
1 ⁵³ / ₆₄	1.8281	9.00	28.75	16 ³ / ₈	4	2 ⁹ / ₆₄	2.1406	11.60	41.25	17	5
1 ²⁷ / ₃₂	1.8437	9.00	28.75	16 ³ / ₈	4	2 ⁵ / ₃₂	2.1562	11.60	41.25	17	5
1 ⁵⁵ / ₆₄	1.8594	9.20	30.00	16 ¹ / ₂	4	2 ¹¹ / ₆₄	2.1719	12.00	42.50	17	5
1 ⁷ / ₈	1.8750	9.20	30.00	16 ¹ / ₂	4	2 ³ / ₁₆	2.1875	12.00	42.50	17	5
1 ⁵⁷ / ₆₄	1.8906	9.35	31.25	16 ¹ / ₂	4	2 ¹³ / ₆₄	2.2031	12.40	43.75	17 ¹ / ₂	5
1 ²⁹ / ₃₂	1.9062	9.35	31.25	16 ¹ / ₂	4	2 ⁷ / ₃₂	2.2187	12.40	43.75	17 ¹ / ₂	5
1 ³ / ₂	1.9219	9.50	32.50	16 ¹ / ₂	4	2 ⁵ / ₁₆	2.2344	12.80	45.00	17 ¹ / ₂	5
1 ⁵⁹ / ₆₄	1.9375	9.50	32.50	16 ¹ / ₂	4	2 ¹ / ₄	2.2500	12.80	45.00	17 ¹ / ₂	5
1 ¹ / ₈	1.9531	9.65	33.75	16 ¹ / ₂	4	2 ¹⁷ / ₆₄	2.2656	13.20	47.50	17 ¹ / ₂	5
1 ⁶¹ / ₆₄	1.9687	9.65	33.75	16 ¹ / ₂	4	2 ⁹ / ₃₂	2.2812	13.20	47.50	17 ¹ / ₂	5
1 ³¹ / ₃₂	1.9844	9.80	35.00	16 ¹ / ₂	4	2 ¹⁴ / ₃₂	2.2969	13.60	50.00	17 ¹ / ₂	5
1 ⁶³ / ₆₄	2.0000	9.80	35.00	16 ¹ / ₂	4	2 ⁵ / ₁₆	2.3125	13.60	50.00	17 ¹ / ₂	5

Taper Square Shank Drills

Fitting Ratchets—No. 1 Shank

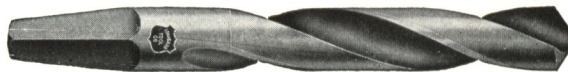


Fig. 5221. Taper Square Shank Drill

Diameter Inch	Price Each		Length Over All Inches	Length Twist Inches	Diameter Inches	Price Each		Length Over All Inches	Length Twist Inches
	Carbon Steel	High Speed Steel				Carbon Steel	High Speed Steel		
1 ¹ / ₈	.90	2.30	4 ¹ / ₂	2 ³ / ₈	2 ⁷ / ₃₂	1.90	4.20	7	4 ³ / ₄
5 ³ / ₃₂	.95	2.35	4 ¹ / ₂	2 ³ / ₈	1 ⁷ / ₈	2.05	4.50	7 ¹ / ₂	5 ¹ / ₄
3 ¹ / ₁₆	.95	2.40	4 ¹ / ₂	2 ³ / ₈	2 ²⁹ / ₃₂	2.20	4.70	7 ¹ / ₂	5 ¹ / ₄
7 ³ / ₃₂	1.00	2.45	5	2 ³ / ₄	1 ¹⁵ / ₁₆	2.30	5.00	8	5 ¹ / ₂
1 ¹ / ₄	1.00	2.50	5	2 ³ / ₄	1 ³¹ / ₃₂	2.40	5.25	8	5 ¹ / ₂
9 ³ / ₃₂	1.05	2.55	5	2 ³ / ₄	1	2.55	5.50	8 ¹ / ₂	6 ¹ / ₄
5 ¹ / ₁₆	1.10	2.60	5	2 ³ / ₄	1 ¹ / ₃₂	2.70	5.75	8 ¹ / ₂	6 ¹ / ₄
11 ³ / ₃₂	1.15	2.65	5	2 ³ / ₄	1 ¹ / ₁₆	2.85	6.00	9	6 ¹ / ₂
3 ¹ / ₈	1.20	2.70	6	3 ³ / ₄	1 ³ / ₃₂	3.00	6.30	9	6 ¹ / ₂
13 ³ / ₃₂	1.25	2.75	6 ¹ / ₄	4	1 ¹ / ₈	3.10	6.70	9	6 ¹ / ₂
7 ¹ / ₁₆	1.25	2.80	6 ¹ / ₄	4	1 ⁵ / ₃₂	3.25	7.00	9	6 ¹ / ₂
15 ³ / ₃₂	1.30	2.85	6 ¹ / ₄	4	1 ³ / ₁₆	3.35	7.30	9	6 ¹ / ₂
1 ¹ / ₂	1.30	2.90	6 ¹ / ₂	4 ³ / ₈	1 ⁷ / ₃₂	3.50	7.60	9	6 ¹ / ₂
1 ¹⁷ / ₃₂	1.35	2.95	6 ¹ / ₂	4 ³ / ₈	1 ¹ / ₄	3.65	7.90	9	6 ¹ / ₂
9 ¹ / ₁₆	1.35	3.00	6 ¹ / ₂	4 ³ / ₈	1 ⁹ / ₃₂	3.75	8.25	9	6 ¹ / ₂
16 ¹ / ₃₂	1.40	3.10	6 ¹ / ₂	4 ³ / ₈	1 ⁵ / ₁₆	3.90	8.60	9	6 ¹ / ₂
19 ¹ / ₃₂	1.40	3.20	6 ¹ / ₂	4 ³ / ₈	1 ¹¹ / ₁₆	4.05	9.00	9	6 ¹ / ₂
21 ¹ / ₃₂	1.45	3.30	6 ¹ / ₂	4 ³ / ₈	1 ³ / ₈	4.20	9.40	9	6 ¹ / ₂
11 ¹ / ₁₆	1.45	3.40	6 ¹ / ₂	4 ³ / ₈	1 ¹³ / ₃₂	4.35	9.80	9	6 ¹ / ₂
23 ¹ / ₃₂	1.50	3.50	6 ¹ / ₂	4 ³ / ₈	1 ⁷ / ₁₆	4.50	10.20	9	6 ¹ / ₂
25 ¹ / ₃₂	1.55	3.65	6 ¹ / ₂	4 ³ / ₈	1 ¹⁵ / ₃₂	4.65	10.60	9	6 ¹ / ₂
3 ¹ / ₄	1.65	3.80	6 ³ / ₄	4 ¹ / ₂	1 ¹ / ₂	4.80	11.00	9	6 ¹ / ₂
13 ¹ / ₁₆	1.75	4.00	7	4 ³ / ₄					

No. 1 Shank $\frac{5}{8}$ x $\frac{3}{8}$ x $1\frac{1}{2}$ inches long.

This size Shank always furnished unless otherwise specified.

Taper Square Shank Drills

Fitting Ratchets—No. 2 Shank

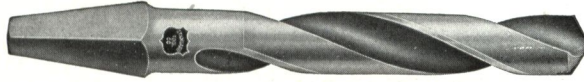


Fig. 5230. Taper Square Shank Drill

Diameter Inches	Price Each		Length Over All Inches	Length Twist Inches	Diameter Inches	Price Each		Length Over All Inches	Length Twist Inches
	Carbon Steel	High Speed Steel				Carbon Steel	High Speed Steel		
$\frac{1}{8}$	.90	2.30	$4\frac{1}{2}$	$2\frac{1}{8}$	$1\frac{3}{32}$	3.00	6.30	9	$6\frac{1}{4}$
$\frac{5}{32}$	.95	2.35	$4\frac{1}{2}$	$2\frac{1}{8}$	$1\frac{1}{8}$	3.10	6.70	9	$6\frac{1}{4}$
$\frac{3}{16}$	.95	2.40	$4\frac{1}{2}$	$2\frac{1}{8}$	$1\frac{5}{32}$	3.25	7.00	9	$6\frac{1}{4}$
$\frac{7}{32}$	1.00	2.45	5	$2\frac{1}{2}$	$1\frac{3}{16}$	3.35	7.30	9	$6\frac{1}{4}$
$\frac{1}{4}$	1.00	2.50	5	$2\frac{1}{2}$	$1\frac{7}{32}$	3.50	7.60	9	$6\frac{1}{4}$
$\frac{9}{32}$	1.05	2.55	5	$2\frac{1}{2}$	$1\frac{1}{4}$	3.65	7.90	9	$6\frac{1}{4}$
$\frac{11}{32}$	1.10	2.60	5	$2\frac{1}{2}$	$1\frac{9}{32}$	3.75	8.25	9	$6\frac{1}{4}$
$\frac{13}{32}$	1.15	2.65	5	$2\frac{1}{2}$	$1\frac{5}{16}$	3.90	8.60	9	$6\frac{1}{4}$
$\frac{3}{8}$	1.20	2.70	6	$3\frac{1}{2}$	$1\frac{11}{32}$	4.05	9.00	9	$6\frac{1}{4}$
$\frac{13}{32}$	1.25	2.75	$6\frac{1}{4}$	$3\frac{5}{8}$	$1\frac{3}{8}$	4.20	9.40	9	$6\frac{1}{4}$
$\frac{7}{16}$	1.25	2.80	$6\frac{1}{4}$	$3\frac{5}{8}$	$1\frac{13}{32}$	4.35	9.80	9	$6\frac{1}{4}$
$\frac{15}{32}$	1.30	2.85	$6\frac{1}{4}$	$3\frac{5}{8}$	$1\frac{7}{16}$	4.50	10.20	9	$6\frac{1}{4}$
$\frac{1}{2}$	1.30	2.90	$6\frac{1}{2}$	4	$1\frac{15}{32}$	4.65	10.60	9	$6\frac{1}{4}$
$\frac{17}{32}$	1.35	2.95	$6\frac{1}{2}$	4	$1\frac{1}{2}$	4.80	11.00	9	$6\frac{1}{4}$
$\frac{19}{32}$	1.35	3.00	$6\frac{1}{2}$	4	$1\frac{17}{32}$	4.95	11.75	$9\frac{1}{4}$	$6\frac{1}{2}$
$\frac{1}{2}$	1.40	3.10	$6\frac{1}{2}$	4	$1\frac{9}{16}$	5.10	12.50	$9\frac{1}{4}$	$6\frac{1}{2}$
$\frac{5}{8}$	1.40	3.20	$6\frac{1}{2}$	4	$1\frac{19}{32}$	5.25	13.25	$9\frac{1}{4}$	$6\frac{1}{2}$
$\frac{21}{32}$	1.45	3.30	$6\frac{1}{2}$	4	$1\frac{5}{8}$	5.40	14.00	$9\frac{1}{4}$	$6\frac{1}{2}$
$\frac{11}{16}$	1.45	3.40	$6\frac{1}{2}$	4	$1\frac{21}{32}$	5.55	14.75	$9\frac{1}{2}$	$6\frac{3}{4}$
$\frac{13}{16}$	1.50	3.50	$6\frac{1}{2}$	4	$1\frac{11}{16}$	5.75	15.50	$9\frac{1}{2}$	$6\frac{3}{4}$
$\frac{3}{4}$	1.55	3.65	$6\frac{1}{2}$	4	$1\frac{23}{32}$	5.90	16.25	$9\frac{1}{2}$	$6\frac{3}{4}$
$\frac{25}{32}$	1.65	3.80	$6\frac{3}{4}$	$4\frac{3}{8}$	$1\frac{3}{4}$	6.10	17.00	$9\frac{1}{2}$	$6\frac{3}{4}$
$\frac{13}{16}$	1.75	4.00	7	$4\frac{1}{2}$	$1\frac{25}{32}$	6.30	17.75	$9\frac{3}{4}$	7
$\frac{27}{32}$	1.90	4.20	7	$4\frac{1}{2}$	$1\frac{13}{16}$	6.50	18.50	$9\frac{3}{4}$	7
$\frac{7}{8}$	2.05	4.50	$7\frac{1}{2}$	5	$1\frac{27}{32}$	6.70	19.50	$9\frac{3}{4}$	7
$\frac{29}{32}$	2.20	4.70	$7\frac{1}{2}$	5	$1\frac{7}{8}$	6.90	20.50	$9\frac{3}{4}$	7
$\frac{15}{16}$	2.30	5.00	8	$5\frac{1}{2}$	$1\frac{29}{32}$	7.10	21.50	10	$7\frac{1}{4}$
$\frac{31}{32}$	2.40	5.25	8	$5\frac{1}{2}$	$1\frac{15}{16}$	7.30	22.50	10	$7\frac{1}{4}$
1	2.55	5.50	$8\frac{1}{2}$	$5\frac{7}{8}$	$1\frac{1}{2}$	7.50	23.75	10	$7\frac{1}{4}$
$1\frac{1}{32}$	2.70	5.75	$8\frac{1}{2}$	$5\frac{7}{8}$	2	7.75	25.00	10	$7\frac{1}{4}$
$1\frac{1}{16}$	2.85	6.00	9	$6\frac{1}{4}$					

No. 2 Shank $\frac{3}{4}$ inch x $\frac{1}{2}$ inch x $1\frac{3}{4}$ inches long. This size Shank furnished only when specified.

Straight Shank Twist Drills

Jobbers' or Short Series



Fig. 5231. Jobbers' Straight Shank Twist Drill

Diameter Inch	Decimal Equivalent	Price Per Dozen		Length Over All Inches	Length Twist Inches	Diameter Inch	Decimal Equivalent	Price Per Dozen		Length Over All Inches	Length Twist Inches
		Carbon Steel	High Speed Steel					Carbon Steel	High Speed Steel		
$\frac{1}{32}$	.0312	.90	...	$1\frac{1}{4}$	$\frac{5}{8}$	$\frac{9}{32}$	.2812	3.65	9.10	$4\frac{1}{4}$	$2\frac{31}{32}$
$\frac{3}{64}$	.0469	.95	...	$1\frac{3}{4}$	$\frac{7}{8}$	$\frac{19}{64}$	.2969	3.90	10.50	$4\frac{3}{8}$	$3\frac{31}{32}$
$\frac{1}{16}$	.0625	1.00	5.70	$2\frac{1}{2}$	$1\frac{1}{4}$	$\frac{5}{16}$	.3125	4.20	10.50	$4\frac{1}{2}$	$3\frac{3}{16}$
$\frac{3}{64}$	.0781	1.10	5.70	$2\frac{5}{8}$	$1\frac{3}{8}$	$\frac{21}{64}$	.3281	4.50	12.00	$4\frac{5}{8}$	$3\frac{5}{16}$
$\frac{1}{8}$	.0937	1.20	5.70	$2\frac{3}{4}$	$1\frac{1}{2}$	$\frac{11}{32}$	.3437	4.80	12.00	$4\frac{3}{4}$	$3\frac{3}{8}$
$\frac{7}{64}$	.1094	1.30	5.90	$2\frac{7}{8}$	$1\frac{5}{8}$	$\frac{23}{64}$	.3594	5.10	13.50	$4\frac{7}{8}$	$3\frac{3}{4}$
$\frac{1}{4}$	.1250	1.45	5.90	3	$1\frac{3}{4}$	$\frac{3}{8}$	.3750	5.40	13.50	5	$3\frac{5}{8}$
$\frac{9}{64}$	.1406	1.60	6.10	$3\frac{1}{8}$	$1\frac{7}{8}$	$\frac{25}{64}$	.3906	5.70	15.00	$5\frac{1}{8}$	$3\frac{3}{4}$
$\frac{5}{32}$	.1562	1.80	6.10	$3\frac{1}{4}$	2	$\frac{13}{32}$	.4062	6.00	15.00	$5\frac{1}{4}$	$3\frac{27}{32}$
$\frac{11}{64}$	.1719	2.00	6.30	$3\frac{3}{8}$	$2\frac{1}{8}$	$\frac{27}{64}$	.4219	6.40	17.00	$5\frac{3}{8}$	$3\frac{31}{32}$
$\frac{3}{16}$	.1875	2.20	6.30	$3\frac{1}{2}$	$2\frac{1}{4}$	$\frac{7}{16}$	.4375	6.80	17.00	$5\frac{1}{2}$	$4\frac{1}{16}$
$\frac{13}{64}$	.2031	2.40	7.00	$3\frac{5}{8}$	$2\frac{3}{8}$	$\frac{15}{64}$	.4531	7.20	18.75	$5\frac{5}{8}$	$4\frac{1}{8}$
$\frac{7}{32}$	.2187	2.65	7.00	$3\frac{3}{4}$	$2\frac{1}{2}$	$\frac{1}{2}$	.4687	7.50	18.75	$5\frac{3}{4}$	$4\frac{3}{8}$
$\frac{15}{64}$	.2344	2.90	7.35	$3\frac{7}{8}$	$2\frac{5}{8}$	$\frac{29}{64}$	.4844	7.75	20.00	$5\frac{7}{8}$	$4\frac{3}{2}$
$\frac{1}{4}$	.2500	3.15	7.35	4	$2\frac{3}{4}$	$\frac{1}{2}$	.5000	8.00	20.00	6	$4\frac{1}{2}$
$\frac{17}{64}$	.2656	3.40	9.10	$4\frac{1}{8}$	$2\frac{7}{8}$						

Straight Shank Twist Drills—Long Series

Carbon Steel and High Speed Steel

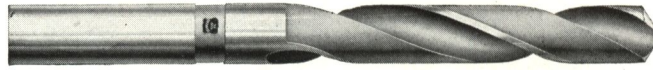


Fig. 5240. Straight Shank Twist Drill

Price Each				Length Over All Inches	Price Each				Length Over All Inches
Diameter Inches	Decimal Equivalent	Carbon Steel	High Speed Steel		Diameter Inches	Decimal Equivalent	Carbon Steel	High Speed Steel	
$\frac{1}{16}$	.0625	.35	.90	3	$\frac{1}{16}$	1.0625	3.40	7.25	$11\frac{1}{4}$
$\frac{5}{64}$	.0781	.40	.90	$3\frac{3}{4}$	$\frac{5}{64}$	1.0781	3.60	7.75	$11\frac{1}{2}$
$\frac{3}{32}$	.0937	.40	.90	$4\frac{1}{4}$	$\frac{3}{32}$	1.0937	3.60	7.75	$11\frac{1}{2}$
$\frac{7}{64}$	.1093	.45	.90	$4\frac{5}{8}$	$\frac{7}{64}$	1.1094	3.80	8.25	$11\frac{3}{4}$
$\frac{1}{8}$	.1250	.45	.90	$5\frac{1}{8}$	$\frac{1}{8}$	1.1250	3.80	8.25	$11\frac{3}{4}$
$\frac{9}{64}$	.1406	.45	.90	$5\frac{3}{8}$	$\frac{9}{64}$	1.1406	4.00	8.90	$11\frac{7}{8}$
$\frac{5}{32}$	.1562	.45	.90	$5\frac{3}{8}$	$\frac{5}{32}$	1.1562	4.00	8.90	$11\frac{7}{8}$
$\frac{11}{64}$	.1719	.50	.90	$5\frac{3}{4}$	$\frac{11}{64}$	1.1719	4.20	9.50	12
$\frac{3}{16}$	.1875	.50	.90	$5\frac{3}{4}$	$\frac{3}{16}$	1.1875	4.20	9.50	12
$\frac{13}{64}$	.2031	.55	1.00	$5\frac{7}{8}$	$\frac{13}{64}$	1.2031	4.40	10.15	$12\frac{1}{8}$
$\frac{7}{32}$	.2187	.55	1.00	6	$\frac{7}{32}$	1.2187	4.40	10.15	$12\frac{1}{8}$
$\frac{15}{64}$	.2344	.60	1.10	$6\frac{1}{8}$	$\frac{15}{64}$	1.2344	4.50	10.75	$12\frac{1}{2}$
$\frac{1}{4}$	.2500	.60	1.10	$6\frac{1}{8}$	$\frac{1}{4}$	1.2500	4.50	10.75	$12\frac{1}{2}$
$\frac{17}{64}$	.2656	.65	1.20	$6\frac{1}{4}$	$\frac{17}{64}$	1.2656	4.65	11.50	$14\frac{1}{8}$
$\frac{9}{32}$	.2812	.65	1.20	$6\frac{1}{4}$	$\frac{9}{32}$	1.2812	4.65	11.50	$14\frac{1}{8}$
$\frac{19}{64}$	.2969	.70	1.30	$6\frac{3}{8}$	$\frac{19}{64}$	1.2969	4.80	12.25	$14\frac{1}{4}$
$\frac{5}{16}$	.3125	.70	1.30	$6\frac{3}{8}$	$\frac{5}{16}$	1.3125	4.80	12.25	$14\frac{1}{4}$
$\frac{21}{64}$	.3281	.75	1.40	$6\frac{1}{2}$	$\frac{21}{64}$	1.3281	5.00	13.00	$14\frac{3}{8}$
$\frac{11}{32}$	.3437	.75	1.40	$6\frac{1}{2}$	$\frac{11}{32}$	1.3437	5.00	13.00	$14\frac{3}{8}$
$\frac{23}{64}$	.3594	.80	1.50	$6\frac{3}{4}$	$\frac{23}{64}$	1.3594	5.20	13.75	$14\frac{1}{2}$
$\frac{3}{8}$	.3750	.80	1.50	$6\frac{3}{4}$	$\frac{3}{8}$	1.3750	5.20	13.75	$14\frac{1}{2}$
$\frac{25}{64}$	.3906	.85	1.65	7	$\frac{25}{64}$	1.3906	5.40	14.65	$14\frac{5}{8}$
$\frac{13}{32}$	.4062	.85	1.65	7	$\frac{13}{32}$	1.4062	5.40	14.65	$14\frac{5}{8}$
$\frac{27}{64}$	.4219	.90	1.75	$7\frac{1}{4}$	$\frac{27}{64}$	1.4219	5.60	15.50	$14\frac{3}{4}$
$\frac{7}{16}$	.4375	.90	1.75	$7\frac{1}{4}$	$\frac{7}{16}$	1.4375	5.60	15.50	$14\frac{3}{4}$
$\frac{29}{64}$	.4531	.95	1.90	$7\frac{1}{2}$	$\frac{29}{64}$	1.4531	5.80	16.40	$14\frac{7}{8}$
$\frac{15}{32}$	.4687	.95	1.90	$7\frac{1}{2}$	$\frac{15}{32}$	1.4687	5.80	16.40	$14\frac{7}{8}$
$\frac{31}{64}$	.4844	1.00	2.00	$7\frac{3}{4}$	$\frac{31}{64}$	1.4844	6.00	17.25	15
$\frac{1}{2}$	.5000	1.00	2.00	$7\frac{3}{4}$	$\frac{1}{2}$	1.5000	6.00	17.25	15
$\frac{33}{64}$	.5156	1.10	2.15	8	*				
$\frac{17}{32}$	.5312	1.10	2.15	8	$\frac{33}{64}$	1.5156	6.30	18.15	$15\frac{1}{8}$
$\frac{35}{64}$	.5469	1.20	2.25	$8\frac{1}{4}$	$\frac{17}{32}$	1.5312	6.30	18.15	$15\frac{1}{8}$
$\frac{9}{16}$	.5625	1.20	2.25	$8\frac{1}{4}$	$\frac{35}{64}$	1.5469	6.60	19.00	$15\frac{1}{4}$
$\frac{37}{64}$	.5781	1.30	2.40	$8\frac{1}{2}$	$\frac{9}{16}$	1.5625	6.60	19.00	$15\frac{1}{4}$
$\frac{19}{32}$	.5937	1.30	2.40	$8\frac{1}{2}$	$\frac{37}{64}$	1.5781	6.90	20.00	$15\frac{3}{8}$
$\frac{39}{64}$	.6094	1.40	2.50	$8\frac{3}{4}$	$\frac{19}{32}$	1.5937	6.90	20.00	$15\frac{3}{8}$
$\frac{5}{8}$	.6250	1.40	2.50	$8\frac{3}{4}$	$\frac{39}{64}$	1.6094	7.20	21.00	$15\frac{1}{2}$
$\frac{41}{64}$	.6406	1.50	2.75	9	$\frac{5}{8}$	1.6250	7.20	21.00	$15\frac{1}{2}$
$\frac{21}{32}$	.6562	1.50	2.75	9	$\frac{41}{64}$	1.6406	7.50	22.00	$15\frac{3}{4}$
$\frac{43}{64}$	.6719	1.60	3.00	$9\frac{1}{4}$	$\frac{21}{32}$	1.6562	7.50	22.00	$15\frac{3}{4}$
$\frac{1}{2}$	.6875	1.60	3.00	$9\frac{1}{4}$	$\frac{43}{64}$	1.6719	7.80	23.00	$15\frac{3}{4}$
$\frac{45}{64}$	.7031	1.70	3.25	$9\frac{1}{2}$	$\frac{1}{2}$	1.6875	7.80	23.00	$15\frac{3}{4}$
$\frac{23}{32}$	.7187	1.70	3.25	$9\frac{1}{2}$	$\frac{45}{64}$	1.7031	8.10	24.00	$15\frac{7}{8}$
$\frac{47}{64}$	.7344	1.85	3.50	$9\frac{3}{4}$	$\frac{23}{32}$	1.7187	8.10	24.00	$15\frac{7}{8}$
$\frac{3}{4}$	.7500	1.85	3.50	$9\frac{3}{4}$	$\frac{47}{64}$	1.7344	8.40	25.00	16
$\frac{49}{64}$	.7656	2.00	3.75	$9\frac{7}{8}$	$\frac{3}{4}$	1.7500	8.40	25.00	16
$\frac{25}{32}$	.7812	2.00	3.75	$9\frac{7}{8}$	$\frac{49}{64}$	1.7656	8.60	26.25	$16\frac{1}{8}$
$\frac{51}{64}$	.7969	2.15	4.00	10	$\frac{25}{32}$	1.7812	8.60	26.25	$16\frac{1}{8}$
$\frac{1}{2}$	.8125	2.15	4.00	10	$\frac{51}{64}$	1.7969	8.80	27.50	$16\frac{1}{4}$
$\frac{53}{64}$	.8281	2.30	4.40	$10\frac{1}{4}$	$\frac{1}{2}$	1.8125	8.80	27.50	$16\frac{1}{4}$
$\frac{27}{32}$	.8437	2.30	4.40	$10\frac{1}{4}$	$\frac{53}{64}$	1.8281	9.00	28.75	$16\frac{3}{8}$
$\frac{55}{64}$	.8594	2.45	4.75	$10\frac{1}{2}$	$\frac{27}{32}$	1.8437	9.00	28.75	$16\frac{3}{8}$
$\frac{57}{64}$	.8750	2.45	4.75	$10\frac{1}{2}$	$\frac{55}{64}$	1.8594	9.20	30.00	$16\frac{1}{2}$
$\frac{29}{32}$	.8906	2.60	5.15	$10\frac{5}{8}$	$\frac{57}{64}$	1.8750	9.20	30.00	$16\frac{1}{2}$
$\frac{61}{64}$	.9062	2.60	5.15	$10\frac{5}{8}$	$\frac{29}{32}$	1.8906	9.35	31.25	$16\frac{1}{2}$
$\frac{31}{32}$	.9219	2.75	5.50	$10\frac{3}{4}$	$\frac{61}{64}$	1.9062	9.35	31.25	$16\frac{1}{2}$
$\frac{63}{64}$	.9375	2.75	5.50	$10\frac{3}{4}$	$\frac{31}{32}$	1.9219	9.50	32.50	$16\frac{1}{2}$
$\frac{15}{16}$	.9531	2.90	5.90	$10\frac{7}{8}$	$\frac{63}{64}$	1.9375	9.50	32.50	$16\frac{1}{2}$
$\frac{1}{4}$	.9687	2.90	5.90	$10\frac{7}{8}$	$\frac{15}{16}$	1.9531	9.65	33.75	$16\frac{1}{2}$
$\frac{65}{64}$	.9844	3.00	6.25	11	$\frac{1}{4}$	1.9687	9.65	33.75	$16\frac{1}{2}$
$\frac{1}{2}$	1.0000	3.00	6.25	11	$\frac{65}{64}$	1.9844	9.80	35.00	$16\frac{1}{2}$
$\frac{1}{4}$	1.0156	3.20	6.75	$11\frac{1}{8}$	$\frac{1}{2}$	2.0000	9.80	35.00	$16\frac{1}{2}$
$\frac{1}{8}$	1.0311	3.20	6.75	$11\frac{1}{8}$	$\frac{1}{4}$	2.0156	10.20	36.25	$16\frac{1}{2}$
$\frac{3}{16}$	1.0469	3.40	7.25	$11\frac{1}{4}$	$\frac{3}{16}$	2.0312	10.20	36.25	$16\frac{1}{2}$

*Discount on Carbon Steel Drills changes here.

Straight Shank Wire Gauge Drills

Carbon Steel and High Speed Steel



Fig. 5250. Straight Shank Wire Gauge Drill

No. by Gauge	Decimal Equivalent	Price Per Dozen		Length Over All Inches	Length Twist Inches	No. by Gauge	Decimal Equivalent	Price Per Dozen		Length Over All Inches	Length Twist Inches
		Carbon Steel	High Speed Steel					Carbon Steel	High Speed Steel		
1	.2280	2.35	7.00	4	2 $\frac{21}{32}$	31	.1200	1.40	5.90	2 $\frac{3}{4}$	1 $\frac{11}{16}$
2	.2210	2.35	7.00	3 $\frac{15}{16}$	2 $\frac{5}{8}$	32	.1160	1.40	5.90	2 $\frac{11}{16}$	1 $\frac{5}{8}$
3	.2130	2.35	7.00	3 $\frac{13}{16}$	2 $\frac{5}{8}$	33	.1130	1.40	5.90	2 $\frac{11}{16}$	1 $\frac{5}{8}$
4	.2090	2.35	7.00	3 $\frac{7}{8}$	2 $\frac{19}{32}$	34	.1110	1.40	5.90	2 $\frac{5}{8}$	1 $\frac{9}{16}$
5	.2055	2.35	7.00	3 $\frac{13}{16}$	2 $\frac{9}{16}$	35	.1100	1.40	5.90	2 $\frac{9}{16}$	1 $\frac{1}{2}$
6	.2040	2.25	7.00	3 $\frac{13}{16}$	2 $\frac{17}{32}$	36	.1065	1.25	5.90	2 $\frac{9}{16}$	1 $\frac{1}{2}$
7	.2010	2.25	7.00	3 $\frac{3}{4}$	2 $\frac{1}{2}$	37	.1040	1.25	5.90	2 $\frac{1}{2}$	1 $\frac{7}{16}$
8	.1990	2.25	7.00	3 $\frac{11}{16}$	2 $\frac{15}{32}$	38	.1015	1.25	5.90	2 $\frac{1}{16}$	1 $\frac{3}{8}$
9	.1960	2.25	7.00	3 $\frac{11}{16}$	2 $\frac{1}{16}$	39	.0995	1.25	5.90	2 $\frac{1}{16}$	1 $\frac{11}{32}$
10	.1935	2.25	7.00	3 $\frac{5}{8}$	2 $\frac{3}{8}$	40	.0980	1.25	5.90	2 $\frac{3}{8}$	1 $\frac{11}{32}$
11	.1910	2.10	6.30	3 $\frac{9}{16}$	2 $\frac{11}{32}$	41	.0960	1.10	5.70	2 $\frac{5}{16}$	1 $\frac{5}{16}$
12	.1890	2.10	6.30	3 $\frac{9}{16}$	2 $\frac{5}{16}$	42	.0935	1.10	5.70	2 $\frac{5}{16}$	1 $\frac{1}{4}$
13	.1850	2.10	6.30	3 $\frac{1}{2}$	2 $\frac{9}{32}$	43	.0890	1.10	5.70	2 $\frac{1}{4}$	1 $\frac{7}{32}$
14	.1820	2.10	6.30	3 $\frac{7}{16}$	2 $\frac{1}{4}$	44	.0860	1.10	5.70	2 $\frac{3}{16}$	1 $\frac{3}{16}$
15	.1800	2.10	6.30	3 $\frac{7}{16}$	2 $\frac{7}{32}$	45	.0820	1.10	5.70	2 $\frac{3}{16}$	1 $\frac{1}{8}$
16	.1770	1.95	6.30	3 $\frac{3}{8}$	2 $\frac{3}{16}$	46	.0810	.95	5.70	2 $\frac{1}{8}$	1 $\frac{1}{8}$
17	.1730	1.95	6.30	3 $\frac{5}{16}$	2 $\frac{5}{32}$	47	.0785	.95	5.70	2 $\frac{1}{16}$	1 $\frac{3}{32}$
18	.1695	1.95	6.30	3 $\frac{5}{16}$	2 $\frac{1}{8}$	48	.0760	.95	5.70	2 $\frac{1}{16}$	1 $\frac{1}{16}$
19	.1660	1.95	6.30	3 $\frac{1}{4}$	2 $\frac{3}{32}$	49	.0730	.95	5.70	2	1
20	.1610	1.95	6.30	3 $\frac{3}{16}$	2 $\frac{1}{16}$	50	.0700	.95	5.70	1 $\frac{15}{16}$	3 $\frac{31}{32}$
21	.1590	1.75	6.10	3 $\frac{3}{16}$	2 $\frac{1}{16}$	51	.0670	.95	5.70	1 $\frac{15}{16}$	1 $\frac{15}{16}$
22	.1570	1.75	6.10	3 $\frac{1}{8}$	2	52	.0635	.95	5.70	1 $\frac{7}{8}$	7 $\frac{7}{8}$
23	.1540	1.75	6.10	3 $\frac{1}{16}$	1 $\frac{31}{32}$	53	.0595	.95	....	1 $\frac{1}{8}$	2 $\frac{27}{32}$
24	.1520	1.75	6.10	3 $\frac{1}{16}$	1 $\frac{15}{16}$	54	.0550	.95	....	1 $\frac{13}{16}$	2 $\frac{27}{32}$
25	.1495	1.75	6.10	3	1 $\frac{29}{32}$	55	.0520	.95	....	1 $\frac{3}{4}$	1 $\frac{13}{16}$
26	.1470	1.55	6.10	2 $\frac{15}{16}$	1 $\frac{7}{8}$	56	.0465	.95	....	1 $\frac{11}{16}$	2 $\frac{23}{32}$
27	.1440	1.55	6.10	2 $\frac{15}{16}$	1 $\frac{27}{32}$	57	.0430	.95	....	1 $\frac{11}{16}$	2 $\frac{23}{32}$
28	.1405	1.55	6.10	2 $\frac{7}{8}$	1 $\frac{13}{16}$	58	.0420	.95	....	1 $\frac{5}{8}$	2 $\frac{23}{32}$
29	.1360	1.55	6.10	2 $\frac{13}{16}$	1 $\frac{3}{4}$	59	.0410	.95	....	1 $\frac{9}{16}$	1 $\frac{11}{16}$
30	.1285	1.55	6.10	2 $\frac{13}{16}$	1 $\frac{23}{32}$	60	.0400	.95	....	1 $\frac{9}{16}$	1 $\frac{11}{16}$

Drill and Countersink Combined



Fig. 5251. Carbon Steel

Angle of Countersink 60°

Size	Diameter of Body	Diameter of Drill	Price per Dozen
A	$\frac{3}{10}$	$\frac{3}{32}$ and $\frac{1}{8}$	1.50
B	$\frac{3}{10}$	$\frac{1}{8}$ and $\frac{1}{8}$	1.50
C	$\frac{3}{10}$	$\frac{3}{32}$ and $\frac{3}{32}$	1.50
D	$\frac{15}{64}$	No. 49 and No. 45	1.50
E	$\frac{13}{64}$	$\frac{1}{16}$ and No. 45	1.50
F	$\frac{7}{16}$	$\frac{5}{32}$ and $\frac{3}{32}$	3.00
G	$\frac{7}{16}$	$\frac{3}{16}$ and $\frac{3}{16}$	3.00
H	$\frac{7}{16}$	$\frac{3}{16}$ and $\frac{5}{32}$	3.00
I	$\frac{13}{64}$	$\frac{1}{16}$ and $\frac{1}{16}$	1.50
J	$\frac{1}{8}$	No. 57 and No. 57	1.50
K	$\frac{13}{64}$	No. 55 and No. 55	1.50
L	$\frac{15}{64}$	No. 45 and No. 45	1.50

Bit Stock Drills

For Metal or Wood



Fig. 5260. Bit Stock Drill

Size of Shanks $\frac{3}{16}$ Inch x $\frac{3}{8}$ Inch x $1\frac{1}{4}$ Inches Long

Diameter Inch	Price		Length Over All Inches	Length Twist Inches	Diameter Inches	Price		Length Over All Inches	Length Twist Inches
	Per Dozen	Each				Per Dozen	Each		
$\frac{1}{32}$	1.25	.12	$2\frac{7}{8}$	$\frac{13}{16}$	$\frac{7}{16}$	8.80	.75	$6\frac{1}{2}$	$4\frac{3}{16}$
$\frac{3}{64}$	1.40	.13	3	$\frac{15}{16}$	$\frac{15}{32}$	9.60	.82	$6\frac{13}{16}$	$4\frac{1}{16}$
$\frac{1}{16}$	1.50	.14	$3\frac{1}{8}$	$1\frac{1}{16}$	$\frac{17}{32}$	10.30	.87	7	$4\frac{5}{8}$
$\frac{5}{64}$	1.60	.15	$3\frac{1}{4}$	$1\frac{1}{8}$	$\frac{17}{16}$	11.00	.92	$7\frac{3}{8}$	5
$\frac{3}{32}$	1.65	.16	$3\frac{1}{2}$	$1\frac{5}{16}$	$\frac{9}{16}$	14.35	1.20	$7\frac{5}{8}$	$5\frac{5}{16}$
$\frac{7}{64}$	1.90	.18	$3\frac{11}{16}$	$1\frac{3}{4}$	$\frac{19}{32}$	15.55	1.30	$7\frac{7}{8}$	$5\frac{5}{8}$
$\frac{1}{8}$	2.10	.20	$3\frac{7}{8}$	$1\frac{7}{8}$	$\frac{5}{8}$	16.15	1.35	8	$5\frac{5}{8}$
$\frac{9}{64}$	2.35	.22	$4\frac{1}{16}$	$2\frac{1}{16}$	$\frac{21}{32}$	17.35	1.45	8	$5\frac{5}{8}$
$\frac{5}{32}$	2.60	.24	$4\frac{1}{4}$	$2\frac{1}{4}$	$\frac{11}{16}$	17.95	1.50	8	$5\frac{5}{8}$
$\frac{11}{64}$	2.85	.26	$4\frac{3}{8}$	$2\frac{3}{8}$	$\frac{23}{32}$	19.15	1.60	8	$5\frac{5}{8}$
$\frac{3}{16}$	3.10	.29	$4\frac{9}{16}$	$2\frac{9}{16}$	$\frac{3}{4}$	19.75	1.65	8	$5\frac{5}{8}$
$\frac{13}{64}$	3.35	.31	$4\frac{11}{16}$	$2\frac{5}{8}$	$\frac{25}{32}$	20.95	1.75	8	$5\frac{5}{8}$
$\frac{7}{32}$	3.60	.33	$4\frac{7}{8}$	$2\frac{13}{16}$	$\frac{13}{16}$	21.55	1.80	8	$5\frac{5}{8}$
$\frac{15}{64}$	3.85	.36	5	$2\frac{1}{2}$	$\frac{15}{16}$	22.75	1.90	8	$5\frac{5}{8}$
$\frac{1}{4}$	4.10	.38	$5\frac{1}{16}$	$3\frac{1}{16}$	$\frac{7}{8}$	23.35	1.95	8	$5\frac{5}{8}$
$\frac{17}{64}$	4.40	.41	$5\frac{3}{8}$	$3\frac{1}{4}$	$\frac{29}{32}$	24.55	2.05	8	$5\frac{5}{8}$
$\frac{9}{32}$	4.70	.43	$5\frac{1}{2}$	$3\frac{3}{8}$	$\frac{15}{16}$	25.75	2.15	8	$5\frac{5}{8}$
$\frac{19}{64}$	5.05	.46	$5\frac{5}{8}$	$3\frac{1}{2}$	$\frac{31}{32}$	26.95	2.25	8	$5\frac{5}{8}$
$\frac{5}{16}$	5.40	.48	$5\frac{3}{4}$	$3\frac{5}{8}$	1	28.15	2.35	8	$5\frac{5}{8}$
$\frac{21}{64}$	5.85	.51	$5\frac{7}{8}$	$3\frac{11}{16}$	$1\frac{1}{16}$	35.95	3.00	8	$5\frac{5}{8}$
$\frac{11}{32}$	6.30	.54	$5\frac{7}{8}$	$3\frac{13}{16}$	$1\frac{1}{8}$	40.15	3.35	8	$5\frac{5}{8}$
$\frac{3}{8}$	7.20	.62	6	$3\frac{3}{4}$	$1\frac{3}{16}$	43.15	3.60	8	$5\frac{5}{8}$
$\frac{13}{32}$	8.00	.68	$6\frac{1}{4}$	4	$1\frac{1}{4}$	44.95	3.75	8	$5\frac{5}{8}$

Our Bit Stock Drills will fit any brace on the market. They are intended principally for wood boring, but can be used to drill iron or other metals. They are not injured by contact with screws or nails, and will bore straight any kind of wood without splitting it. Sizes larger than $\frac{3}{32}$ are made with solid shanks.

Wood Boring Brace Drills

Carbon Steel

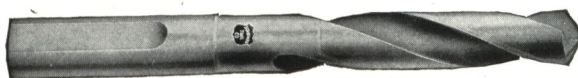
Fig. 5261
Wood Boring Brace DrillSize of Shanks $\frac{3}{16}$ Inch x $\frac{3}{8}$ Inch x $1\frac{1}{4}$ Inches Long

No.	Price		Length Over All Inches	Length Twist Inches	No.	Price		Length Over All Inches	Length Twist Inches
	Per Dozen	Each				Per Dozen	Each		
2	1.60	.15	$3\frac{1}{2}$	$1\frac{1}{4}$	18	5.50	.50	$9\frac{1}{2}$	$4\frac{3}{4}$
3	1.60	.15	4	$1\frac{1}{2}$	19	6.00	.55	$9\frac{3}{4}$	$4\frac{7}{8}$
4	1.60	.15	$4\frac{1}{2}$	$2\frac{1}{4}$	20	6.00	.55	10	5
5	1.75	.18	5	$2\frac{1}{2}$	22	6.50	.60	$10\frac{1}{2}$	$5\frac{1}{4}$
6	2.00	.20	$5\frac{1}{2}$	$2\frac{3}{4}$	24	7.00	.65	11	$5\frac{1}{2}$
7	2.50	.22	6	3	26	7.50	.70	$11\frac{1}{4}$	$5\frac{5}{8}$
8	3.00	.25	$6\frac{1}{2}$	$3\frac{1}{4}$	28	8.00	.75	$11\frac{1}{2}$	$5\frac{3}{4}$
9	3.50	.30	7	$3\frac{1}{2}$	30	9.00	.85	$11\frac{3}{4}$	$5\frac{7}{8}$
10	3.50	.30	$7\frac{1}{2}$	$3\frac{3}{4}$	32	10.00	.95	12	6
11	4.00	.35	$7\frac{3}{4}$	$3\frac{7}{8}$	34	11.00	1.05	$12\frac{1}{4}$	$6\frac{1}{8}$
12	4.00	.35	8	4	36	12.00	1.15	$12\frac{1}{2}$	$6\frac{1}{4}$
13	4.50	.40	$8\frac{1}{4}$	$4\frac{1}{8}$	38	13.00	1.25	$12\frac{3}{4}$	$6\frac{3}{8}$
14	4.50	.40	$8\frac{1}{2}$	$4\frac{1}{4}$	40	14.00	1.35	$12\frac{3}{4}$	$6\frac{3}{8}$
15	5.00	.45	$8\frac{3}{4}$	$4\frac{3}{8}$	42	15.00	1.45	13	$6\frac{1}{2}$
16	5.00	.45	9	$4\frac{1}{2}$	44	16.00	1.55	13	$6\frac{1}{2}$
17	5.50	.50	$9\frac{1}{4}$	$4\frac{5}{8}$					

The numbers indicate the sizes in 32nds of an inch. Specially tempered and pointed for wood, but are not injured by contact with nails, plaster, etc.

Coe Drills— $\frac{5}{8}$ -Inch Shank

Fitting Blacksmith



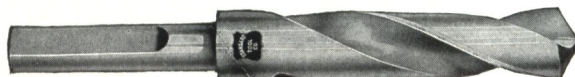
Drill Presses

Fig. 5270. Coe Drill

Diameter Inch	Price Each		Length Over All Inches	Length Twist Inches	Diameter Inch	Price Each		Length Over All Inches	Length Twist Inches
	Carbon Steel	High Speed Steel				Carbon Steel	High Speed Steel		
$\frac{1}{16}$	.45	....	$3\frac{5}{8}$	$1\frac{1}{16}$	$\frac{33}{64}$	.98	1.95	6	3
$\frac{5}{64}$	.50	....	$3\frac{7}{8}$	$1\frac{1}{4}$	$\frac{17}{64}$	.98	1.95	6	3
$\frac{3}{32}$	.50	....	$4\frac{1}{4}$	$1\frac{5}{8}$	$\frac{33}{64}$	1.00	2.05	6	3
$\frac{7}{64}$	.55	....	$4\frac{1}{2}$	$1\frac{7}{8}$	$\frac{35}{64}$	1.00	2.05	6	3
$\frac{1}{8}$	.55	....	$4\frac{7}{8}$	$2\frac{1}{16}$	$\frac{9}{16}$	1.03	2.20	6	3
$\frac{9}{64}$	.58	....	5	$2\frac{5}{16}$	$\frac{19}{64}$	1.03	2.20	6	3
$\frac{5}{32}$	.58	....	$5\frac{1}{8}$	$2\frac{7}{16}$	$\frac{39}{64}$	1.05	2.30	6	3
$\frac{11}{64}$	.60	....	$5\frac{1}{4}$	$2\frac{9}{16}$	$\frac{61}{64}$	1.05	2.30	6	3
$\frac{3}{16}$	.60	....	$5\frac{1}{2}$	$2\frac{11}{16}$	$\frac{7}{8}$	1.10	2.40	6	3
$\frac{13}{64}$	.65	....	$5\frac{5}{8}$	$2\frac{13}{16}$	$\frac{41}{64}$	1.10	2.40	6	3
$\frac{7}{32}$	.65	....	$5\frac{3}{4}$	3	$\frac{21}{32}$	1.15	2.50	6	3
$\frac{15}{64}$	.70	....	$5\frac{7}{8}$	3	$\frac{43}{64}$	1.15	2.50	6	3
$\frac{1}{4}$	.70	1.20	6	3	$\frac{1}{2}$	1.20	2.65	6	3
$\frac{17}{64}$	.73	1.30	6	3	$\frac{23}{32}$	1.20	2.65	6	3
$\frac{9}{32}$	.73	1.30	6	3	$\frac{47}{64}$	1.25	2.75	6	3
$\frac{19}{64}$	.75	1.40	6	3	$\frac{3}{4}$	1.25	2.75	6	3
$\frac{5}{16}$	.75	1.40	6	3	$\frac{49}{64}$	1.30	2.90	6	3
$\frac{21}{64}$	.80	1.50	6	3	$\frac{25}{32}$	1.30	2.90	6	3
$\frac{11}{32}$	.80	1.50	6	3	$\frac{37}{64}$	1.35	3.00	6	3
$\frac{23}{64}$	.85	1.55	6	3	$\frac{1}{2}$	1.35	3.00	6	3
$\frac{3}{8}$	.85	1.55	6	3	$\frac{13}{16}$	1.40	3.15	6	3
$\frac{25}{64}$	.88	1.65	6	3	$\frac{53}{64}$	1.40	3.15	6	3
$\frac{13}{32}$	.88	1.65	6	3	$\frac{27}{32}$	1.45	3.30	6	3
$\frac{27}{64}$	.90	1.70	6	3	$\frac{55}{64}$	1.45	3.30	6	3
$\frac{7}{16}$	.90	1.70	6	3	$\frac{7}{8}$	1.55	3.50	6	3
$\frac{29}{64}$	.93	1.80	6	3	$\frac{57}{64}$	1.55	3.50	6	3
$\frac{15}{32}$	.93	1.80	6	3	$\frac{29}{32}$	1.60	3.70	6	3
$\frac{31}{64}$	.95	1.85	6	3	$\frac{59}{64}$	1.60	3.70	6	3
$\frac{1}{2}$	.95	1.85	6	3	$\frac{1}{2}$	1.70	3.90	6	3

Silver and Deming Drills— $\frac{1}{2}$ -Inch Shanks

Fitting Blacksmith



Drill Presses

Fig. 5271. S. & D. Drill

Diameter Inch	Price Each		Length Over All Inches	Length Twist Inches	Diameter Inch	Price Each		Length Over All Inches	Length Twist Inches
	Carbon Steel	High Speed Steel				Carbon Steel	High Speed Steel		
$\frac{1}{16}$	.35	....	$3\frac{5}{8}$	$1\frac{1}{16}$	$\frac{15}{32}$	.83	1.70	6	3
$\frac{5}{64}$	.40	....	$3\frac{7}{8}$	$1\frac{1}{4}$	$\frac{31}{64}$	.85	1.75	6	3
$\frac{3}{32}$	.40	....	$4\frac{1}{4}$	$1\frac{5}{8}$	$\frac{17}{32}$	.85	1.75	6	3
$\frac{7}{64}$	.45	....	$4\frac{1}{2}$	$1\frac{7}{8}$	$\frac{33}{64}$	.88	1.90	6	3
$\frac{1}{8}$	.45	....	$4\frac{7}{8}$	$2\frac{1}{16}$	$\frac{35}{64}$	.88	1.90	6	3
$\frac{9}{64}$	.45	....	5	$2\frac{3}{16}$	$\frac{17}{32}$	.90	2.05	6	3
$\frac{5}{32}$	.45	....	$5\frac{1}{8}$	$2\frac{5}{16}$	$\frac{37}{64}$	.90	2.05	6	3
$\frac{11}{64}$	.50	....	$5\frac{1}{4}$	$2\frac{7}{16}$	$\frac{19}{32}$	.95	2.20	6	3
$\frac{3}{16}$	.50	....	$5\frac{1}{2}$	$2\frac{9}{16}$	$\frac{39}{64}$	.95	2.20	6	3
$\frac{13}{64}$	.55	....	$5\frac{5}{8}$	$2\frac{11}{16}$	$\frac{41}{64}$	1.05	2.30	6	3
$\frac{7}{32}$	.55	....	$5\frac{7}{8}$	3	$\frac{21}{32}$	1.05	2.30	6	3
$\frac{15}{64}$	.60	....	6	3	$\frac{43}{64}$	1.10	2.40	6	3
$\frac{1}{4}$	.60	1.10	6	3	$\frac{23}{32}$	1.10	2.40	6	3
$\frac{17}{64}$	.65	1.20	6	3	$\frac{47}{64}$	1.15	2.50	6	3
$\frac{9}{32}$	.65	1.20	6	3	$\frac{3}{4}$	1.15	2.50	6	3
$\frac{19}{64}$	.70	1.30	6	3	$\frac{49}{64}$	1.20	2.65	6	3
$\frac{5}{16}$	.70	1.30	6	3	$\frac{25}{32}$	1.20	2.65	6	3
$\frac{21}{64}$	.73	1.40	6	3	$\frac{37}{64}$	1.25	2.75	6	3
$\frac{11}{32}$	.73	1.40	6	3	$\frac{1}{2}$	1.25	2.75	6	3
$\frac{23}{64}$	.75	1.45	6	3	$\frac{53}{64}$	1.30	2.90	6	3
$\frac{3}{8}$	.75	1.45	6	3	$\frac{27}{32}$	1.30	2.90	6	3
$\frac{25}{64}$	.78	1.55	6	3	$\frac{55}{64}$	1.35	3.00	6	3
$\frac{13}{32}$	.78	1.55	6	3	$\frac{1}{2}$	1.35	3.00	6	3
$\frac{27}{64}$	.80	1.60	6	3	$\frac{57}{64}$	1.40	3.15	6	3
$\frac{7}{16}$	.80	1.60	6	3	$\frac{29}{32}$	1.40	3.15	6	3
$\frac{29}{64}$	.83	1.70	6	3	$\frac{59}{64}$	1.45	3.30	6	3
$\frac{15}{32}$					$\frac{1}{2}$				

Wire Gauge and Jobbers' Drill Sets

The Standard Metal Drill Holder and Gauge Combined
The Neatest and Most Convenient Drill Holder Made

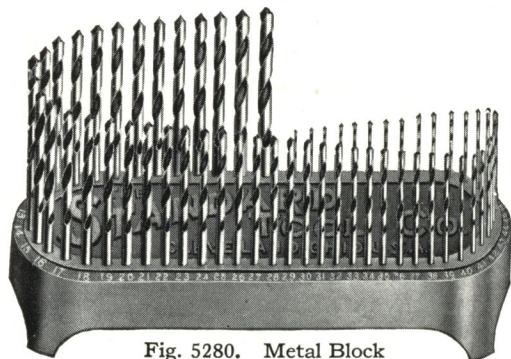


Fig. 5280. Metal Block

Prices of Sets

Metal Block, Fig. 5280

Set No. 5

Sizes $\frac{1}{16}$ to $\frac{1}{2}$ inch, by 64ths, mounted on Metal Block. 11.50

Set No. 8

Sizes No. 1 to No. 60, mounted on Metal Block. 9.75

Price of Metal Block only. 1.00

Prices of Sets

Wood Block, Fig. 5281

Set No. 5A

Jobbers' Straight Shank Drills, $\frac{1}{16}$ to $\frac{1}{2}$ inch, by 64ths, mounted on Wood Block. 10.00

Set No. 6

Jobbers' Straight Shank Drills, $\frac{1}{16}$ to $\frac{1}{2}$ inch, by 32nds, mounted on Wood Block. 5.40

Set No. 7

Wire Gauge Drills, No. 1 to No. 60, and Jobbers' Straight Shank Drills, $\frac{1}{4}$ to $\frac{3}{8}$ inch, by 32nds, mounted on Wood Block. 9.90

Set No. 8A

Wire Gauge Drills, No. 1 to No. 60, mounted on Wood Block. 8.10

Set No. 9

Half Set Wire Gauge Drills, Alternate Nos. from 1 to 59, mounted on Wood Block. 4.30
Price of Block only, for any of above sets.40



Fig. 5281. Wood Block

Taper Shank Drills in Sets

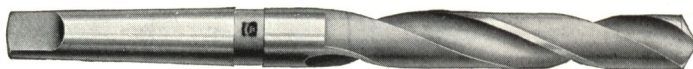


Fig. 5282

Prices of Sets

Set No. 1

Sizes $\frac{1}{4}$ to 1 inch, by 16ths. 20.00

Set No. 2

Sizes $\frac{3}{8}$ to $1\frac{1}{4}$ inch, by 16ths. 34.50

Set No. 3

Sizes $\frac{3}{8}$ to $\frac{3}{4}$ inch, by 32nds, $\frac{13}{16}$ to $1\frac{1}{4}$ inch, by 16ths. 42.00

Set No. 4

Sizes $\frac{3}{8}$ to $\frac{3}{4}$ inch, by 32nds, $\frac{13}{16}$ to $1\frac{1}{2}$ inch, by 16ths. 64.00
Sizes $1\frac{9}{16}$ to 2 inch, by 16ths. 67.00 } 131.00

Set No. 11

Sizes $\frac{3}{8}$ to $1\frac{1}{2}$ inch, by 32nds. 105.00

Steel Sockets and Sleeves



Fig. 5290

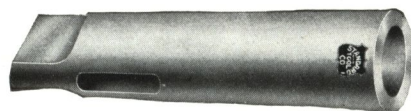


Fig. 5291

Steel Sockets—Finished Shanks

For Taper Shank Drills

Size No.	Description	Price Each
1 to 2	No. 1 Hole and No. 2 Shank	2.00
1 to 3	No. 1 Hole and No. 3 Shank	2.50
1 to 4	No. 1 Hole and No. 4 Shank	3.20
1 to 5	No. 1 Hole and No. 5 Shank	4.80
2 to 3	No. 2 Hole and No. 3 Shank	2.50
2 to 4	No. 2 Hole and No. 4 Shank	3.20
2 to 5	No. 2 Hole and No. 5 Shank	4.80
3 to 2	No. 3 Hole and No. 2 Shank	3.20
3 to 3	No. 3 Hole and No. 3 Shank	3.20
3 to 4	No. 3 Hole and No. 4 Shank	3.20
3 to 5	No. 3 Hole and No. 5 Shank	4.80
4 to 3	No. 4 Hole and No. 3 Shank	4.80
4 to 4	No. 4 Hole and No. 4 Shank	4.80
4 to 5	No. 4 Hole and No. 5 Shank	4.80
4 to 6	No. 4 Hole and No. 6 Shank	12.00
5 to 4	No. 5 Hole and No. 4 Shank	12.00
5 to 5	No. 5 Hole and No. 5 Shank	12.00
5 to 6	No. 5 Hole and No. 6 Shank	12.00

Steel Sleeves

For Taper Shank Drills

Size No.	Description	Price Each
1 to 2	No. 1 Hole—Outside Fitting No. 2 Socket	1.80
1 to 3	No. 1 Hole—Outside Fitting No. 3 Socket	2.40
1 to 4	No. 1 Hole—Outside Fitting No. 4 Socket	3.00
1 to 5	No. 1 Hole—Outside Fitting No. 5 Socket	4.40
2 to 3	No. 2 Hole—Outside Fitting No. 3 Socket	2.40
2 to 4	No. 2 Hole—Outside Fitting No. 4 Socket	3.00
2 to 5	No. 2 Hole—Outside Fitting No. 5 Socket	4.40
3 to 4	No. 3 Hole—Outside Fitting No. 4 Socket	3.00
3 to 5	No. 3 Hole—Outside Fitting No. 5 Socket	4.40
4 to 5	No. 4 Hole—Outside Fitting No. 5 Socket	4.40
4 to 6	No. 4 Hole—Outside Fitting No. 6 Socket	10.00
5 to 6	No. 5 Hole—Outside Fitting No. 6 Socket	10.00

Standard Hand Reamers

Carbon Steel and High Speed Steel

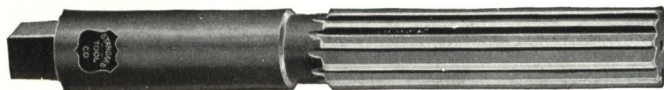


Fig. 5292. Hand Reamer

Diam. Inch.	Carbon Steel Each	High Speed Steel Each	Length Over All Inches	Length Flute Inches	Diam. Inches	Carbon Steel Each	High Speed Steel Each	Length Over All Inches	Length Flute Inches	Diam. Inches	Carbon Steel Each	High Speed Steel Each	Length Over All Inches	Length Flute Inches
1/8	1.00	3.00	3	1 1/2	7/8	3.10	8.50	9 1/16	4 2/3	1 5/8	7.20	25.75	13	6 1/2
5/32	1.10	3.25	3 1/4	1 5/8	29/32	3.25	9.50	10 3/32	5 3/4	1 3/4	7.40	27.50	13 1/2	6 3/4
3/16	1.20	3.25	3 1/2	1 3/4	15/16	3.40	9.50	10 1/4	5 1/8	1 11/16	7.60	27.50	13 1/2	6 3/4
7/32	1.30	3.50	3 3/4	1 7/8	31/32	3.55	10.50	10 11/16	5 1/2	1 13/16	7.80	29.50	13 1/2	6 3/4
1/4	1.40	3.50	4	2	1	3.70	10.50	10 7/8	5 7/16	1 3/4	8.00	29.50	13 1/2	6 3/4
9/32	1.45	3.75	4 1/4	2 1/8	1 1/32	3.85	11.50	11 1/16	5 1/2	1 35/64	8.20	31.50	13 1/2	6 3/4
5/16	1.50	3.75	4 1/2	2 1/4	1 1/16	4.00	11.50	11 1/4	5 5/8	1 13/16	8.40	31.50	13 1/2	6 3/4
11/32	1.55	4.25	4 3/4	2 3/8	1 1/8	4.15	12.75	11 7/16	5 3/2	1 27/32	8.60	33.50	13 1/2	6 3/4
3/8	1.60	4.25	5	2 1/2	1 1/8	4.30	12.75	11 5/8	5 13/16	1 5/8	8.80	33.50	14	7
13/32	1.70	4.75	5 1/4	2 5/8	1 5/16	4.45	14.25	11 3/4	5 23/32	1 29/32	9.00	35.75	14	7
7/16	1.75	4.75	5 1/2	2 3/4	1 1/2	4.60	14.25	12	6	1 15/16	9.20	35.75	14	7
15/32	1.85	5.25	5 3/4	2 7/8	1 7/16	4.75	15.75	12 1/8	6 1/16	1 31/32	9.40	38.00	14	7
1/2	1.90	5.25	6	3	1 1/4	4.90	15.75	12 1/4	6 1/8	2	9.60	38.00	14	7
17/32	1.95	5.75	6 1/4	3 1/8	1 9/16	5.05	17.25	12 1/2	6 11/16	2 1/32	9.80	40.75	14 1/2	7 1/4
9/16	2.00	5.75	6 1/2	3 1/4	1 5/8	5.20	17.25	12 1/2	6 3/4	2 1/16	10.00	40.75	14 1/2	7 1/4
19/32	2.10	6.25	6 3/4	3 3/8	1 11/16	5.40	18.75	12 1/2	6 11/8	2 3/32	10.20	43.50	14 1/2	7 1/4
5/8	2.20	6.25	7	3 1/2	1 3/4	5.60	18.75	12 5/8	6 5/16	2 1/8	10.40	43.50	14 1/2	7 1/4
21/32	2.30	6.75	7 1/2	3 3/4	1 13/16	5.80	20.50	12 3/4	6 3/4	2 3/16	10.60	46.25	15	7 1/2
11/16	2.40	6.75	7 1/2	3 3/4	1 7/8	6.00	20.50	12 3/4	6 13/16	2 1/4	10.80	46.25	15	7 1/2
23/32	2.50	7.25	8 1/8	4 1/16	1 15/16	6.20	22.25	12 3/4	6 29/32	2 3/8	11.05	49.00	15	7 1/2
3/4	2.60	7.25	8 3/8	4 3/16	1 1/2	6.40	22.25	13	6 1/2	2 1/4	11.30	49.00	15	7 1/2
25/32	2.70	7.75	8 3/4	4 1/4	1 13/16	6.60	24.00	13	6 1/2	2 5/8	11.55	51.75	15	7 1/2
13/16	2.80	7.75	9 1/16	4 3/8	1 15/16	6.80	24.00	13	6 1/2	2 3/4				
27/32	2.95	8.50	9 3/8	4 1/2	1 31/32	7.00	25.75	13	6 1/2					

64th sizes furnished at price of next larger size.

Our Reamers are made with Eccentric Flutes and are slightly tapered on end to facilitate entering work.

Standard Hand Reamers



Fig. 5300. Hand Reamer, Spiral Flute

Diameter Inches	Price Each		Length Over All Inches	Length Flute Inches	Diameter Inches	Price Each		Length Over All Inches	Length Flute Inches
	Carbon Steel	High Speed Steel				Carbon Steel	High Speed Steel		
1/8	1.00	3.00	3	1 1/2	1 1/8	4.30	12.75	11 5/8	5 13/16
5/32	1.10	3.25	3 1/4	1 5/8	1 3/32	4.45	14.25	11 13/16	5 29/32
3/16	1.20	3.25	3 1/2	1 3/4	1 1/16	4.60	14.25	12	6
7/16	1.30	3.50	3 3/4	1 7/8	1 1/32	4.75	15.75	12 1/8	6 1/16
1/2	1.40	3.50	4	2	1 1/4	4.90	15.75	12 1/4	6 1/8
9/16	1.45	3.75	4 1/4	2 1/8	1 5/16	5.20	17.25	12 7/16	6 3/16
5/8	1.50	3.75	4 1/2	2 1/4	1 3/8	5.60	18.75	12 5/8	6 3/8
11/16	1.55	4.25	4 3/4	2 3/8	1 1/2	6.00	20.50	12 13/16	6 13/32
3/4	1.60	4.25	5	2 1/2	1 5/8	6.40	22.25	13	6 1/2
13/16	1.70	4.75	5 1/4	2 3/8	1 3/4	6.80	24.00	13	6 1/2
7/8	1.75	4.75	5 1/2	2 3/4	1 7/8	7.20	25.75	13	6 1/2
15/16	1.85	5.25	5 3/4	2 7/8	1 11/16	7.60	27.50	13 1/2	6 3/4
1	1.90	5.25	6	3	1 3/4	8.00	29.50	13 1/2	6 3/4
1 1/32	1.95	5.75	6 1/4	3 1/8	1 13/16	8.40	31.50	13 1/2	6 3/4
1 1/16	2.00	5.75	6 1/2	3 1/4	1 7/8	8.80	33.50	14	7
1 1/8	2.10	6.25	6 3/4	3 3/8	1 15/16	9.20	35.75	14	7
5/8	2.20	6.25	7	3 1/2	2	9.60	38.00	14	7
21/32	2.30	6.75	7 1/32	3 3/4	2 1/16	10.00	40.75	14 1/2	7 1/4
11/16	2.40	6.75	7 1/16	3 3/2	2 1/8	10.40	43.50	14 1/2	7 1/4
23/32	2.50	7.25	8 1/8	4 1/16	2 3/16	10.80	46.25	15	7 1/2
3/4	2.60	7.25	8 3/8	4 1/8	2 1/4	11.30	49.00	15	7 1/2
25/32	2.70	7.75	8 3/2	4 1/4	2 5/16	11.80	51.75	15	7 1/2
13/16	2.80	7.75	9 1/16	4 1/2	2 3/8	12.30	55.00	15	7 1/2
27/32	2.95	8.50	9 3/8	4 1/2	2 7/16	12.80	58.25	15 1/2	7 3/4
7/8	3.10	8.50	9 1/2	4 3/4	2 1/2	13.40	61.50	15 1/2	7 3/4
29/32	3.25	9.50	10 3/32	5 3/4	2 9/16	14.00	64.75	15 1/2	7 3/4
1 1/16	3.40	9.50	10 1/4	5 1/8	2 5/8	14.60	68.00	16	8
1 1/32	3.55	10.50	10 1/16	5 1/2	2 11/16	15.40	71.25	16	8
1	3.70	10.50	10 7/8	5 7/16	2 3/4	16.20	74.50	16	8
1 1/32	3.85	11.50	11 1/16	5 3/2	2 13/16	17.00	77.75	16 1/2	8 1/4
1 1/16	4.00	11.50	11 1/4	5 5/8	2 7/8	17.80	81.00	16 1/2	8 1/4
1 1/8	4.15	12.75	11 1/16	5 3/2	3	19.40	87.50	16 1/2	8 1/4

32nd sizes not listed furnished at prices intermediate, and 64th sizes at price of next larger size. Our Reamers are made with Eccentric Flute and are slightly tapered on end to facilitate entering work.

Steel Mandrels—Hardened and Ground



Fig. 5301. Steel Mandrel

Diameter Inches	Price Each	Length Over All Inches	Diameter Inches	Price Each	Length Over All Inches	Diameter Inches	Price Each	Length Over All Inches	Diameter Inches	Price Each	Length Over All Inches
1/4	.65	3 3/4	2 3/16	6.00	12	1 1/4	2.45	8	3 3/16	13.80	14
5/16	.75	4	2 1/4	6.50	12	1 3/16	2.60	8 1/4	3 1/4	14.10	14
3/8	.85	4 1/4	2 5/16	6.90	12	1 3/8	2.75	8 1/2	3 5/16	14.40	15
7/16	.95	4 1/2	2 3/8	7.40	12	1 7/16	2.90	8 3/4	3 7/16	14.70	15
1/2	1.05	5	2 1/2	7.90	12 1/2	1 1/2	3.10	9	3 1/2	15.00	15
9/16	1.15	5 1/4	2 1/2	8.40	12 1/2	1 5/8	3.30	9 1/4	3 1/2	15.30	15
5/8	1.25	5 1/2	2 9/16	8.90	12 1/2	1 5/8	3.50	9 1/2	3 9/16	15.60	16
11/16	1.35	5 3/4	2 5/8	9.40	12 1/2	1 11/16	3.70	9 3/4	3 5/8	15.90	16
3/4	1.45	6	2 1/2	9.90	13	1 3/4	3.90	10	3 11/16	16.20	16
13/16	1.55	6 1/4	2 3/4	10.50	13	1 13/16	4.10	10 1/4	3 3/4	16.50	16
7/8	1.70	6 1/2	2 13/16	11.00	13	1 7/8	4.35	10 1/2	3 13/16	16.80	17
15/16	1.85	6 3/4	2 7/8	11.50	13	1 15/16	4.60	10 3/4	3 7/8	17.20	17
1	2.00	7	2 15/16	12.00	13	2	4.80	11	3 15/16	17.60	17
1 1/16	2.10	7 1/4	3	12.50	13	2 1/16	5.15	11 1/2	4	18.00	17
1 1/8	2.20	7 1/2	3 1/16	13.00	14	2 1/8	5.60	11 1/2	...	...	...
1 3/8	2.30	7 3/4	3 1/8	13.40	14						

These Mandrels are slightly tapered and correspond in size to our Reamers, and will fit holes reamed by them.

The size is stamped on the large end and the diameter taken at a point distant from the small end an amount equal to the diameter.

Shell Reamers

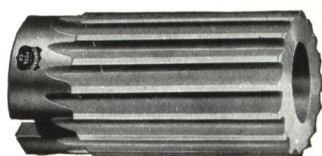


Fig. 5310. Fluted

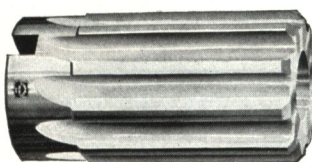


Fig. 5311. Rose

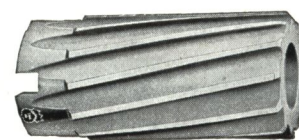


Fig. 5312. Spiral

Diameter Inches	Price Each		Length Over All Inches	Size Hole Inch	Fitting Arbor Number	Diameter Inches	Price Each		Length Over All Inches	Size Hole Inches	Fitting Arbor Number
	Carbon Steel	High Speed Steel					Carbon Steel	High Speed Steel			
1/2	1.40	3.25	2	1/4	3	1 1/8	4.40	11.25	3 1/2	1	8
9/16	1.50	3.40	2	1/4	3	1 7/8	4.70	12.00	3 1/2	1	8
5/8	1.60	3.55	2 1/4	3/8	4	1 15/16	5.00	12.75	3 1/2	1	8
11/16	1.60	3.70	2 1/4	3/8	4	2	5.20	13.50	3 1/2	1	8
3/4	1.60	3.85	2 1/2	1/2	5	2 1/16	5.40	14.25	3 3/4	1 1/4	9
13/16	1.60	4.00	2 1/2	1/2	5	2 1/8	5.60	15.00	3 3/4	1 1/4	9
7/8	1.70	4.25	2 1/2	1/2	5	2 3/16	5.80	15.75	3 3/4	1 1/4	9
15/16	1.70	4.50	2 1/2	1/2	5	2 1/4	6.00	16.50	3 3/4	1 1/4	9
1	1.80	4.75	2 3/4	5/8	6	2 5/16	6.20	17.25	3 3/4	1 1/4	9
1 1/16	1.80	5.00	2 3/4	5/8	6	2 3/8	6.40	18.00	3 3/4	1 1/4	9
1 1/8	1.90	5.25	2 3/4	5/8	6	2 7/16	6.60	18.75	3 3/4	1 1/4	9
1 1/16	2.00	5.50	2 3/4	5/8	6	2 1/2	6.80	19.50	3 3/4	1 1/4	9
1 1/4	2.20	5.75	2 3/4	5/8	6	2 9/16	7.00	20.50	4	1 1/2	10
1 5/16	2.40	6.00	3	3/4	7	2 5/8	7.30	21.75	4	1 1/2	10
1 3/8	2.60	6.50	3	3/4	7	2 11/16	7.60	23.00	4	1 1/2	10
1 7/16	2.80	7.00	3	3/4	7	2 3/4	8.00	24.25	4	1 1/2	10
1 1/2	3.00	7.50	3	3/4	7	2 13/16	8.40	25.50	4	1 1/2	10
1 9/16	3.20	8.25	3	3/4	7	2 7/8	8.80	27.00	4	1 1/2	10
1 5/8	3.50	9.00	3	3/4	7	2 15/16	9.20	28.50	4	1 1/2	10
1 11/16	3.80	9.75	3 1/2	1	8	3	9.60	30.00	4	1 1/2	10
1 3/4	4.10	10.50	3 1/2	1	8						

Straight and Taper Shank Arbors

For Shell Reamers and Shell Drills



Fig. 5313. Straight Shank Arbor



Fig. 5314. Taper Shank Arbor

Number	Price Each	Fitting Sizes	Length Over All Inches	Number	Price Each	Fitting Sizes	Length Over All Inches	Standard Taper Shank Number
3	1.60	1/2 to 9/16	8	3	2.60	1/2 to 9/16	8	1
4	1.80	5/8 to 11/16	9	4	2.80	5/8 to 11/16	9	2
5	2.00	3/4 to 1 1/16	9 1/2	5	3.00	3/4 to 1 1/16	9 1/2	2
6	2.20	1 to 1 1/4	10	6	3.20	1 to 1 1/4	10	3
7	2.40	1 5/16 to 1 5/8	11	7	3.40	1 5/16 to 1 5/8	11	3
8	2.70	1 11/16 to 2	12	8	3.70	1 11/16 to 2	12	4
9	3.00	2 1/16 to 2 1/2	13	9	4.50	2 1/16 to 2 1/2	13	4
10	3.40	2 9/16 to 3	14	10	4.90	2 9/16 to 3	14	5
11	5.00	3 1/16 to 3 1/2	15	11	6.75	3 1/16 to 3 1/2	15	5
12	7.00	3 9/16 to 4	16	12	8.75	3 9/16 to 4	16	5
13	9.00	4 1/16 to 4 1/2	17	13	10.75	4 1/16 to 4 1/2	17	5
14	12.00	4 9/16 to 5 1/2	18	14	14.00	4 9/16 to 5 1/2	18	5
15	14.75	5 9/16 to 6 1/2	19	15	16.75	5 9/16 to 6 1/2	19	6
16	17.50	6 9/16 to 7	20	16	19.50	6 9/16 to 7	20	6

Rose Chucking Reamers—Straight Shanks

Carbon Steel and High Speed Steel

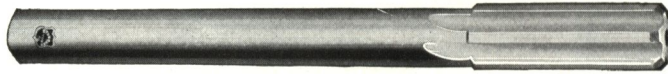


Fig. 5320. Rose Chucking Reamer

Diameter Inches	Price Each		Length Over All Inches	Length Flute Inches	Diameter Inches	Price Each		Length Over All Inches	Length Flute Inches
	Carbon Steel	High Speed Steel				Carbon Steel	High Speed Steel		
$\frac{1}{4}$	.80	3.00	6	$1\frac{1}{2}$	$1\frac{7}{32}$	2.65	15.25	11	$2\frac{7}{8}$
$\frac{5}{32}$	.85	3.25	6	$1\frac{1}{2}$	$1\frac{1}{4}$	2.70	15.25	$11\frac{1}{2}$	3
$\frac{3}{16}$	.90	3.25	6	$1\frac{1}{2}$	$1\frac{1}{8}$	2.85	17.00	$11\frac{1}{2}$	3
$\frac{11}{32}$	.95	3.75	6	$1\frac{1}{2}$	$1\frac{3}{8}$	3.00	18.75	12	$3\frac{1}{4}$
$\frac{3}{8}$	1.00	3.75	7	$1\frac{3}{4}$	$1\frac{7}{16}$	3.15	20.50	12	$3\frac{1}{4}$
$\frac{13}{32}$	1.05	4.25	7	$1\frac{3}{4}$	$1\frac{1}{2}$	3.30	22.25	$12\frac{1}{2}$	$3\frac{1}{2}$
$\frac{7}{16}$	1.10	4.25	7	$1\frac{3}{4}$	$1\frac{9}{16}$	3.45	24.00	$12\frac{1}{2}$	$3\frac{1}{2}$
$\frac{15}{32}$	1.15	4.75	7	$1\frac{3}{4}$	$1\frac{5}{8}$	3.60	25.75	13	$3\frac{3}{4}$
$\frac{1}{2}$	1.20	4.75	8	2	$1\frac{11}{16}$	3.75	27.50	13	$3\frac{3}{4}$
$\frac{17}{32}$	1.25	5.25	8	2	$1\frac{3}{4}$	3.90	29.50	$13\frac{1}{2}$	4
$\frac{9}{16}$	1.30	5.25	8	2	$1\frac{13}{16}$	4.05	31.50	$13\frac{1}{2}$	4
$\frac{19}{32}$	1.35	5.75	8	2	$1\frac{7}{8}$	4.20	33.50	14	$4\frac{1}{4}$
$\frac{5}{8}$	1.40	5.75	9	$2\frac{1}{4}$	$1\frac{15}{16}$	4.40	35.75	14	$4\frac{1}{4}$
$\frac{21}{32}$	1.45	6.25	9	$2\frac{1}{4}$	2	4.60	38.00	14	$4\frac{1}{4}$
$\frac{11}{16}$	1.50	6.25	9	$2\frac{1}{4}$	$2\frac{1}{16}$	4.90	40.75	$14\frac{1}{2}$	$4\frac{1}{2}$
$\frac{23}{32}$	1.55	6.75	9	$2\frac{1}{4}$	$2\frac{1}{8}$	5.20	43.50	$14\frac{1}{2}$	$4\frac{1}{2}$
$\frac{3}{4}$	1.60	6.75	$9\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{3}{16}$	5.50	46.25	$14\frac{1}{2}$	$4\frac{1}{2}$
$\frac{25}{32}$	1.65	7.25	$9\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{1}{4}$	5.80	49.00	$14\frac{1}{2}$	$4\frac{1}{2}$
$\frac{13}{16}$	1.70	7.25	$9\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{5}{16}$	6.10	51.75	15	$4\frac{3}{4}$
$\frac{27}{32}$	1.75	8.00	$9\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{3}{8}$	6.40	55.00	15	$4\frac{3}{4}$
$\frac{7}{8}$	1.80	8.00	10	$2\frac{5}{8}$	$2\frac{7}{16}$	6.80	58.25	15	$4\frac{3}{4}$
$\frac{29}{32}$	1.90	9.00	10	$2\frac{5}{8}$	$2\frac{1}{2}$	7.20	61.50	15	$4\frac{3}{4}$
$\frac{15}{16}$	1.95	9.00	10	$2\frac{5}{8}$	$2\frac{9}{16}$	7.50	64.75	$15\frac{1}{2}$	5
$\frac{31}{32}$	2.05	10.00	10	$2\frac{5}{8}$	$2\frac{5}{8}$	7.80	68.00	$15\frac{1}{2}$	5
1	2.10	10.00	$10\frac{1}{2}$	$2\frac{3}{4}$	$2\frac{11}{16}$	8.10	71.25	$15\frac{1}{2}$	5
$\frac{1}{32}$	2.20	11.25	$10\frac{1}{2}$	$2\frac{3}{4}$	$2\frac{3}{4}$	8.40	74.50	$15\frac{1}{2}$	5
$\frac{1}{16}$	2.25	11.25	$10\frac{1}{2}$	$2\frac{3}{4}$	$2\frac{13}{16}$	8.80	77.75	16	$5\frac{1}{4}$
$\frac{3}{32}$	2.35	12.50	$10\frac{1}{2}$	$2\frac{3}{4}$	$2\frac{7}{8}$	9.20	81.00	16	$5\frac{1}{4}$
$\frac{1}{8}$	2.40	12.50	11	$2\frac{7}{8}$	$2\frac{15}{16}$	9.60	84.25	16	$5\frac{1}{4}$
$\frac{5}{32}$	2.50	13.75	11	$2\frac{7}{8}$	3	10.00	87.50	16	$5\frac{1}{4}$
$\frac{3}{16}$	2.55	13.75	11	$2\frac{7}{8}$					

These Reamers have a flute for each cutting edge, which relieves the Reamer and prevents the chips crowding in on the surface and binding.

32nd sizes not listed furnished at prices intermediate, and 64th sizes at price of next larger size.

Furnished also with Taper Shanks, and Fluted, with Straight and Taper Shanks.

Taper Reamers—Carbon Steel

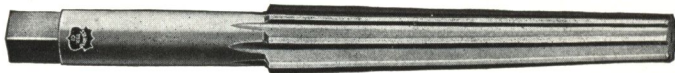


Fig. 5321. Finishing Reamer

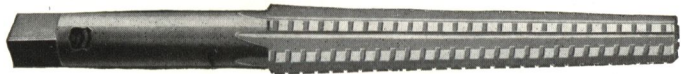


Fig. 5322. Roughing Reamer

Taper Reamers

No.	Price Each	Length Over All Inches	Length Flute Inches	Diameter Small End	Diameter Large End	Taper Per Inch	Taper Per Foot
0	1.60	$3\frac{3}{4}$	$2\frac{1}{4}$	.250	.367	.05208	.625
1	2.00	$5\frac{1}{2}$	3	.367	.517	.05000	.600
2	2.60	$6\frac{3}{4}$	$3\frac{1}{2}$	.569	.745	.05016	.602
3	3.40	$7\frac{3}{4}$	$4\frac{1}{4}$	.775	.988	.05016	.602
4	4.20	$8\frac{7}{8}$	$5\frac{1}{4}$	1.017	1.289	.05191	.623
5	6.60	$10\frac{3}{8}$	$6\frac{1}{8}$	1.471	1.799	.05250	.630
6	12.00	12	$8\frac{1}{2}$	2.112	2.555	.05216	.626
7	35.00	16	12	2.746	3.371	.05208	.625

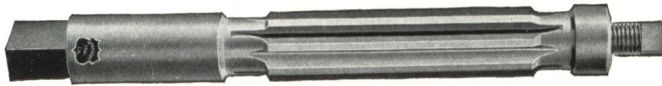


Fig. 5330. Expansion Reamer

Expansion and Taper Pin Reamers



Fig. 5331. Taper Pin Reamer

Expansion Reamers—Carbon Steel

Diameter Inch	Price Each	Length Over All Inches	Length Flute Inches	Diameter Inches	Price Each	Length Over All Inches	Length Flute Inches	Diameter Inches	Price Each	Length Over All Inches	Length Flute Inches
$\frac{1}{4}$	3.00	$3\frac{7}{8}$	$1\frac{11}{16}$	$\frac{13}{16}$	5.25	$7\frac{1}{16}$	$3\frac{1}{16}$	$\frac{13}{16}$	10.50	$10\frac{1}{2}$	$4\frac{9}{16}$
$\frac{9}{32}$	3.05	4	$1\frac{3}{4}$	$\frac{27}{32}$	5.50	$7\frac{1}{2}$	$3\frac{5}{16}$	$\frac{13}{32}$	11.00	$10\frac{7}{8}$	$4\frac{3}{4}$
$\frac{5}{16}$	3.10	4	$1\frac{3}{4}$	$\frac{7}{8}$	5.75	$7\frac{1}{2}$	$3\frac{5}{16}$	$\frac{1}{16}$	11.50	$10\frac{7}{8}$	$4\frac{3}{4}$
$\frac{11}{32}$	3.15	$4\frac{1}{4}$	$1\frac{3}{4}$	$\frac{29}{32}$	6.00	$7\frac{7}{8}$	$3\frac{9}{16}$	$\frac{15}{32}$	12.00	$11\frac{1}{8}$	$4\frac{13}{16}$
$\frac{3}{8}$	3.20	$4\frac{1}{4}$	$1\frac{3}{4}$	$\frac{15}{16}$	6.25	$7\frac{7}{8}$	$3\frac{9}{16}$	$\frac{1}{2}$	12.50	$11\frac{1}{8}$	$4\frac{13}{16}$
$\frac{13}{32}$	3.25	$4\frac{1}{2}$	$1\frac{3}{4}$	$\frac{31}{32}$	6.50	$8\frac{3}{8}$	$3\frac{3}{4}$	$\frac{9}{16}$	13.00	$11\frac{1}{4}$	$4\frac{13}{16}$
$\frac{7}{16}$	3.30	$4\frac{1}{2}$	$1\frac{3}{4}$	1	6.75	$8\frac{3}{8}$	$3\frac{3}{4}$	$\frac{5}{8}$	13.50	$11\frac{1}{2}$	$4\frac{7}{8}$
$\frac{15}{32}$	3.35	5	$1\frac{13}{16}$	$\frac{1}{32}$	7.00	$8\frac{11}{16}$	4	$\frac{11}{16}$	14.00	$11\frac{5}{8}$	$4\frac{7}{8}$
$\frac{1}{2}$	3.40	5	$1\frac{13}{16}$	$\frac{1}{16}$	7.25	$8\frac{11}{16}$	4	$\frac{3}{4}$	14.50	$11\frac{7}{8}$	5
$\frac{17}{32}$	3.50	$5\frac{1}{2}$	$2\frac{1}{8}$	$\frac{3}{32}$	7.50	9	$4\frac{1}{8}$	$\frac{13}{16}$	15.00	$12\frac{1}{16}$	5
$\frac{9}{16}$	3.65	$5\frac{1}{2}$	$2\frac{1}{8}$	$\frac{1}{8}$	7.75	9	$4\frac{1}{8}$	$\frac{1}{8}$	15.50	$12\frac{1}{4}$	5
$\frac{19}{32}$	3.80	6	$2\frac{1}{2}$	$\frac{5}{32}$	8.00	$9\frac{3}{8}$	$4\frac{1}{4}$	$\frac{15}{16}$	16.00	$12\frac{3}{8}$	5
$\frac{3}{4}$	4.00	6	$2\frac{1}{2}$	$\frac{15}{16}$	8.30	$9\frac{3}{8}$	$4\frac{1}{4}$	2	16.50	$12\frac{9}{16}$	5
$\frac{25}{32}$	4.20	$6\frac{1}{4}$	$2\frac{1}{2}$	$\frac{1}{32}$	8.60	$9\frac{3}{4}$	$4\frac{3}{8}$	$\frac{21}{8}$	17.50	$12\frac{3}{4}$	$5\frac{1}{8}$
$\frac{11}{16}$	4.40	$6\frac{1}{4}$	$2\frac{1}{2}$	$\frac{1}{4}$	8.90	$9\frac{3}{4}$	$4\frac{3}{8}$	$\frac{1}{2}$	18.50	13	$5\frac{1}{8}$
$\frac{13}{16}$	4.60	$6\frac{9}{16}$	$2\frac{11}{16}$	$\frac{9}{16}$	9.20	$10\frac{1}{8}$	$4\frac{1}{2}$	$\frac{23}{8}$	19.50	$13\frac{1}{2}$	$5\frac{1}{4}$
$\frac{3}{4}$	4.80	$6\frac{11}{16}$	$2\frac{13}{16}$	$\frac{5}{8}$	9.50	$10\frac{1}{8}$	$4\frac{1}{2}$	$\frac{3}{2}$	20.50	14	$5\frac{3}{8}$
$\frac{25}{32}$	5.00	$7\frac{1}{16}$	$3\frac{1}{16}$	$\frac{11}{32}$	10.00	$10\frac{1}{2}$	$4\frac{9}{16}$				

The maximum expansion for above Reamers is as follows:

Sizes $\frac{1}{4}$ -inch to $\frac{5}{8}$ -inch.....	.005	Sizes $1\frac{1}{16}$ -inch to $1\frac{1}{2}$ -inch.....	.010
Sizes $\frac{11}{16}$ -inch to 1-inch.....	.008	Sizes $1\frac{9}{16}$ -inch to 2-inch.....	.012
Sizes $2\frac{1}{8}$ -inch to $2\frac{1}{2}$ -inch.....			.015

Taper Pin Reamers—Carbon Steel

No.	Price Each	Diameter Small End	Length Flute Inches	Length Over All Inches	No.	Price Each	Diameter Small End	Length Flute Inches	Length Over All Inches
0	1.00	.135	$1\frac{1}{2}$	$2\frac{1}{4}$	8	3.00	.398	$5\frac{1}{4}$	$6\frac{3}{4}$
1	1.00	.146	$1\frac{3}{4}$	$2\frac{1}{2}$	9	3.50	.482	$6\frac{1}{8}$	8
2	1.25	.162	2	3	10	4.00	.581	7	9
3	1.50	.183	$2\frac{1}{4}$	$3\frac{1}{2}$	11	4.75	.706	$8\frac{1}{4}$	$11\frac{1}{4}$
4	1.75	.208	$2\frac{1}{2}$	4	12	5.50	.842	10	$13\frac{3}{8}$
5	2.00	.240	3	$4\frac{1}{2}$	13	6.50	1.009	12	16
6	2.25	.279	$3\frac{5}{8}$	5	14	7.75	1.250	14	$18\frac{1}{4}$
7	2.50	.331	$4\frac{1}{2}$	6					

These Reamers have the same taper, and each will overlay in convenient measure the size next smaller. The diameter is taken at extreme end. Special sizes made to order.

Bit Stock Taper Reamers



Fig. 5332. Bit Stock Taper Reamer

Taper 1 Inch Per Foot

Nominal Size Inch	Price Each	Diameter Small End Inch	Diameter Large End Inch	Length Over All Inches	Length Flute Inches	Nominal Size Inches	Price Each	Diameter Small End Inches	Diameter Large End Inches	Length Over All Inches	Length Flute Inches
$\frac{1}{8}$	.35	.0520	.1875	$3\frac{3}{4}$	$1\frac{5}{8}$	$\frac{7}{8}$	1.60	.6772	.9375	$5\frac{1}{4}$	$3\frac{1}{8}$
$\frac{3}{16}$	.35	.1040	.2500	$3\frac{7}{8}$	$1\frac{3}{4}$	$\frac{15}{16}$	1.80	.7293	1.0000	$5\frac{3}{8}$	$3\frac{1}{4}$
$\frac{1}{4}$	.45	.1563	.3125	4	$1\frac{7}{8}$	1	2.00	.7814	1.0625	$5\frac{1}{2}$	$3\frac{3}{8}$
$\frac{5}{16}$	.50	.2084	.3750	$4\frac{1}{8}$	2	$1\frac{1}{16}$	2.20	.8335	1.1250	$5\frac{5}{8}$	$3\frac{1}{2}$
$\frac{3}{8}$	.55	.2605	.4375	$4\frac{1}{4}$	$2\frac{1}{8}$	$1\frac{1}{8}$	2.40	.8856	1.1875	$5\frac{3}{4}$	$3\frac{5}{8}$
$\frac{7}{16}$	.60	.3125	.5000	$4\frac{3}{8}$	$2\frac{1}{4}$	$1\frac{3}{16}$	2.60	.9376	1.2500	$5\frac{7}{8}$	$3\frac{3}{4}$
$\frac{1}{2}$	.70	.3647	.5625	$4\frac{1}{2}$	$2\frac{3}{8}$	$1\frac{1}{4}$	2.80	.9896	1.3125	6	$3\frac{7}{8}$
$\frac{9}{16}$	.80	.4168	.6250	$4\frac{5}{8}$	$2\frac{1}{2}$	$1\frac{5}{16}$	3.00	1.0420	1.3750	$6\frac{1}{8}$	4
$\frac{5}{8}$	.90	.4689	.6875	$4\frac{3}{4}$	$2\frac{5}{8}$	$1\frac{3}{8}$	3.20	1.0940	1.4375	$6\frac{1}{4}$	$4\frac{1}{8}$
$\frac{11}{16}$	1.05	.5210	.7500	$4\frac{7}{8}$	$2\frac{3}{4}$	$1\frac{7}{16}$	3.40	1.1460	1.5000	$6\frac{3}{8}$	$4\frac{1}{4}$
$\frac{3}{4}$	1.20	.5729	.8125	5	$2\frac{7}{8}$	$1\frac{1}{2}$	3.60	1.1980	1.5625	$6\frac{1}{2}$	$4\frac{3}{8}$
$\frac{13}{16}$	1.40	.6250	.8750	$5\frac{1}{8}$	3						

Reamers

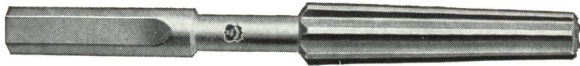
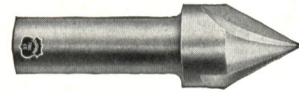
Fig. 5340. Straight Shank Taper Reamer, with Shanks
1/2 inch diameter, 2 inches long. Taper 1 inch per foot

Fig. 5341. Center Reamer

Straight Shank Taper Reamers

Nominal Size Inch	Price Each	Diameter Small End Inch	Diameter Large End Inch	Length Over All Inches	Length Flute Inches	Nominal Size Inches	Price Each	Diameter Small End Inches	Diameter Large End Inches	Length Over All Inches	Length Flute Inches
1/8	.35	.0520	.1875	4	1 5/8	13/16	1.40	.6250	.8750	5 7/8	3
3/16	.35	.1040	.2500	4 1/4	1 3/4	7/8	1.60	.6772	.9375	6	3 1/8
1/4	.45	.1563	.3125	4 3/4	1 7/8	15/16	1.80	.7293	1.0000	6 1/8	3 1/4
5/16	.50	.2084	.3750	4 7/8	2	1	2.00	.7814	1.0625	6 1/4	3 3/8
3/8	.55	.2605	.4375	5	2 1/8	1 1/16	2.20	.8335	1.1250	6 3/8	3 1/2
7/16	.60	.3125	.5000	5 1/8	2 1/4	1 1/8	2.40	.8856	1.1875	6 1/2	3 5/8
1/2	.70	.3647	.5625	5 1/4	2 3/8	1 3/16	2.60	.9376	1.2500	6 5/8	3 3/4
9/16	.80	.4168	.6250	5 3/8	2 1/2	1 1/4	2.80	.9896	1.3125	6 3/4	3 7/8
5/8	.90	.4689	.6875	5 1/2	2 5/8	1 5/16	3.00	1.0420	1.3750	6 7/8	4
11/16	1.05	.5210	.7500	5 5/8	2 3/4	1 3/8	3.20	1.0940	1.4375	7	4 1/8
3/4	1.20	.5729	.8125	5 3/4	2 7/8	1 7/16	3.40	1.1460	1.5000	7 1/8	4 1/4
						1 1/2	3.60	1.1980	1.5625	7 1/4	4 3/8

Center Reamers—Included Angle 60°

Size Cut, inch.....	1/4	3/8	1/2	5/8	3/4
Diameter of Shank, inch.....	3/16	1/4	3/8	3/8	1/2
Price each.....	.25	.30	.35	.60	.75

Machinists' Hand Taps



Fig. 5342. Taper



Fig. 5343. Plug



Fig. 5344. Bottoming

Machinists Hand Taps—Less Than 1/4-Inch Diameter

U. S. threads furnished unless otherwise ordered.

All sizes and threads not listed are special and subject to special prices.

Left-hand Taps are special.

Diameter of Tap Inch	Price		No. of Threads to the Inch—Standard Pitches			U. S. Form Threads also Furnished
	Each	Per Set	U. S.	Whitworth	"V" Form	
1/16	.70	2.10	64	60	..	72
5/64	.60	1.80	60	..	..	72
3/32	.50	1.50	50	48	..	48, 56
7/64	.40	1.20	48	..	..	56
1/8	.35	1.05	40	40	..	32
9/64	.35	1.05	40	..	..	..
5/32	.35	1.05	36	32	..	32
11/64	.35	1.05	32	..	..	..
3/16	.35	1.05	24	24	24	30, 32
13/64	.35	1.05	24	..	..	..
7/32	.35	1.05	24	24	24	32
15/64	.35	1.05	24	..	..	..

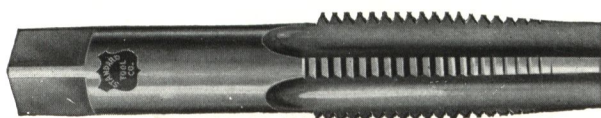


Fig. 5350. Taper

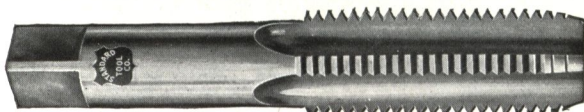


Fig. 5351. Plug

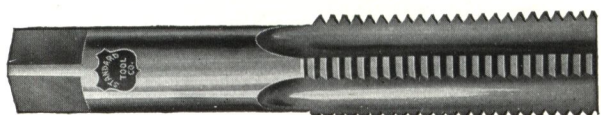


Fig. 5352. Bottoming

Machinists' Hand Taps

U. S. threads furnished unless otherwise ordered.

All sizes, lengths and threads not listed are special and subject to special prices.

Left hand threads are special.

Oversizes will be furnished, when desired, at the same prices as standard sizes, in V form of thread, and in standard pitches only; $\frac{1}{64}$ inch oversize for sizes $\frac{1}{4}$ inch to $\frac{3}{8}$ inch, inclusive, and $\frac{1}{32}$ inch oversizes for sizes $\frac{1}{4}$ inch to $1\frac{1}{2}$ inches, inclusive.

Orders for hand taps to and including $\frac{1}{2}$ inch will be filled with taps having shanks full diameter of thread. Taps $\frac{7}{16}$ inch and larger will be furnished with shanks size of bottom of thread.

We will furnish at regular prices hand taps with full size shanks from $\frac{1}{4}$ inch to $\frac{1}{2}$ inch inclusive, and also hand taps with shank size of bottom of thread $\frac{3}{8}$ inch and larger.

Hand Taps

$\frac{1}{4}$ Inch and Larger—Continued from Preceding Page

Sizes and Prices

Diameter of Tap Inches	Price		Number of Threads to the Inch						Length Over All Inches
			Standard Pitches				Other Pitches Also Furnished		
	Each	Per Set	U. S.	S. A. E.	Whitworth	V Form	U. S. Form	V Form	
$\frac{1}{4}$	.45	1.35	20	28	20	20	24, 32	24, 27, 32	$2\frac{1}{2}$
$\frac{5}{16}$	.50	1.50	18	24	18	18	20, 32	20, 24, 27	$2\frac{3}{8}$
$\frac{3}{8}$	.55	1.65	16	24	16	16	20	20, 24, 27	$2\frac{1}{2}$
$\frac{7}{16}$	.60	1.80	14	20	14	14	24	20, 24, 27	$3\frac{1}{8}$
$\frac{1}{2}$	.70	2.10	13	20	12	12	12, 24	20, 24, 27	$3\frac{3}{8}$
$\frac{9}{16}$	.80	2.40	12	18	12	12	.....	27	$3\frac{1}{2}$
$\frac{5}{8}$	.90	2.70	11	18	11	11	12	12, 27	$3\frac{3}{4}$
$\frac{3}{4}$	1.05	3.15	11	16	11	11	.....	.....	$4\frac{1}{8}$
$\frac{7}{8}$	1.20	3.60	10	16	10	10	12	12, 27	$4\frac{1}{4}$
$1\frac{1}{8}$	1.40	4.20	10	.....	10	10	.....	.....	$4\frac{3}{8}$
$1\frac{1}{4}$	1.60	4.80	9	14, 18	9	9	12	12, 27	$4\frac{1}{2}$
$1\frac{3}{8}$	1.80	5.40	9	.....	9	9	.....	.....	$4\frac{3}{4}$
1	2.00	6.00	8	14	8	8	12	12, 27	$5\frac{1}{8}$
$1\frac{1}{8}$	2.25	6.75	7	12	7	7	.....	.....	$5\frac{1}{4}$
$1\frac{1}{4}$	2.60	7.80	7	12	7	7	.....	.....	$5\frac{3}{4}$
$1\frac{3}{8}$	3.00	9.00	6	12	6	6	.....	.....	$6\frac{1}{8}$
$1\frac{1}{2}$	3.50	10.50	6	12	6	6	.....	.....	$6\frac{3}{8}$
$1\frac{5}{8}$	4.20	12.60	$5\frac{1}{2}$	..	5	..	.....	.....	$6\frac{1}{2}$
$1\frac{3}{4}$	5.00	15.00	5	..	5	..	.....	.....	7
$1\frac{7}{8}$	5.80	17.40	5	..	$4\frac{1}{2}$	..	.....	.....	$7\frac{1}{8}$
2	6.70	20.10	$4\frac{1}{2}$	..	$4\frac{1}{2}$	..	.....	.....	$7\frac{3}{8}$
$2\frac{1}{8}$	8.00	24.00	$4\frac{1}{2}$	..	$4\frac{1}{2}$	..	.....	.....	8
$2\frac{1}{4}$	9.20	27.60	$4\frac{1}{2}$	..	4	..	.....	.....	$8\frac{1}{4}$
$2\frac{3}{8}$	10.50	31.50	4	..	4	..	.....	.....	$8\frac{3}{8}$
$2\frac{1}{2}$	11.50	34.50	4	..	4	..	.....	.....	$8\frac{3}{4}$

Machine Screw Taps



Fig. 5353. Machine Screw Tap

Furnished in sets of taper, plug and bottoming at regular prices. Plug taps furnished unless otherwise ordered.

A. S. M. E. Standard

Size of Screw Gauge	Price		Standard Number of Threads	Threads also Furnished	Screw Gauge No.	Basic Outside Diameter Inch	Price		Number Threads to the Inch	
	Each	Per Dozen					Each	Per Dozen	Standard	Also Furnished
1	.70	8.40	72	56	0	.060	.70	8.40	80	64
2	.60	7.20	56	64	1	.073	.70	8.40	72	64
3	.50	6.00	48	56	2	.086	.60	7.20	64	56
4	.40	4.80	36	32, 40, 48	3	.099	.50	6.00	56	48
5	.35	4.20	36	40	4	.112	.40	4.80	48	36, 40
6	.35	4.20	32	40	5	.125	.35	4.20	44	36, 40
7	.35	4.20	32	40	6	.138	.35	4.20	40	32, 36
8	.35	4.20	32	30, 40	7	.151	.35	4.20	36	30, 32
9	.35	4.20	30	32	8	.164	.35	4.20	36	30, 32
10	.35	4.20	24	28, 30, 32	9	.177	.35	4.20	32	24, 30
12	.35	4.20	24	32	10	.190	.35	4.20	30	24, 32
14	.45	5.40	20	24	12	.216	.35	4.20	28	24
16	.45	5.40	18	20	14	.242	.45	5.40	24	20
18	.50	6.00	18	20	16	.268	.45	5.40	22	20
20	.50	6.00	16	18	18	.294	.50	6.00	20	18
22	.55	6.60	16	..	20	.320	.50	6.00	20	18
24	.55	6.60	16	..	22	.346	.55	6.60	18	16
26	.55	6.60	16	..	24	.372	.55	6.60	16	18
28	.60	7.20	14	..	26	.398	.55	6.60	16	14
30	.60	7.20	14	..	28	.424	.60	7.20	14	16
					30	.450	.60	7.20	14	16

Machine Nut Taps

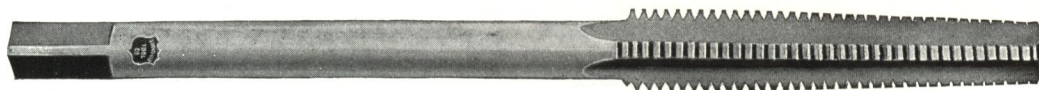


Fig. 5360. Machine Nut Tap

Nut Taps

U. S. Threads furnished unless otherwise ordered.

All sizes, lengths and threads not listed are special, and subject to special prices.

Left hand taps are special.

We will furnish Nut Taps from $\frac{1}{4}$ -inch to 1 inch inclusive, $\frac{1}{32}$ -inch over size in standard pitches only of the V form.

Sizes and Prices

Diam. of Tap Inches	Price	Number of Threads to the Inch				Length of Thread Inches	Length Over All Inches
		U. S. Standard	S. A. E. Standard	Whitworth Standard	"V" Form		
$\frac{3}{16}$	.60	24, 32	..	24	24	..	4 $\frac{1}{2}$
$\frac{1}{4}$	.60	20	28	20	20	..	5
$\frac{5}{16}$	.70	18	24	18	18	..	5 $\frac{1}{2}$
$\frac{3}{8}$	.80	16	24	16	16	..	6
$\frac{7}{16}$	.90	14	20	14	14	..	6 $\frac{1}{2}$
$\frac{1}{2}$	1.00	13	20	12	12	..	7
$\frac{9}{16}$	1.15	12	18	12	12	..	7 $\frac{1}{2}$
$\frac{5}{8}$	1.30	11	18	11	11	..	8
$\frac{11}{16}$	1.45	11	16	11	11	..	8 $\frac{1}{2}$
$\frac{3}{4}$	1.60	10	16	10	10	..	9
$\frac{13}{16}$	1.80	10	..	10	10	..	9 $\frac{1}{2}$
$\frac{7}{8}$	2.10	9	14, 18	9	9	..	10
$\frac{15}{16}$	2.40	9	..	9	9	..	10 $\frac{1}{2}$
1	3.15	8	14	8	8	..	11
1 $\frac{1}{8}$	3.60	7	12	7	7	..	11 $\frac{1}{2}$
1 $\frac{1}{4}$	4.25	7	12	7	7	..	12
1 $\frac{3}{8}$	4.80	6	12	6	6	..	12 $\frac{1}{2}$
1 $\frac{1}{2}$	5.65	6	12	6	6	..	13
1 $\frac{5}{8}$	6.50	5 $\frac{1}{2}$	..	5	..	..	13 $\frac{1}{2}$
1 $\frac{3}{4}$	7.20	5	..	5	..	..	14
1 $\frac{7}{8}$	8.25	5	..	4 $\frac{1}{2}$	..	..	14 $\frac{1}{2}$
2	9.25	4 $\frac{1}{2}$	..	4 $\frac{1}{2}$	..	..	15
2 $\frac{1}{8}$	10.80	4 $\frac{1}{2}$	..	4 $\frac{1}{2}$	..	..	15 $\frac{1}{2}$
2 $\frac{1}{4}$	12.25	4 $\frac{1}{2}$	..	4	..	..	16
2 $\frac{3}{8}$	13.80	4	..	4	..	..	16 $\frac{1}{2}$
2 $\frac{1}{2}$	15.00	4	..	4	..	..	17

Stove Bolt Taps



Fig. 5361. Stove Bolt Tap

Diam. Inch	Price Each	Price Per Dozen	Number Threads to Inch
$\frac{5}{32}$	.35	4.20	28
$\frac{3}{16}$	.35	4.20	24
$\frac{7}{32}$	.35	4.20	22
$\frac{1}{4}$	.45	5.40	18
$\frac{5}{16}$	.50	6.00	18
$\frac{3}{8}$	.55	6.60	16

These Taps correspond in sizes and threads to the American Screw Co.'s Stove Bolts.

Less than six taps of a size will be charged as single taps.

All sizes and threads not listed will be charged at special prices.

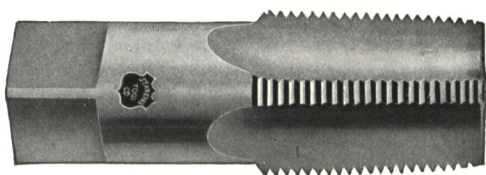


Fig. 5370. Taper Pipe Tap

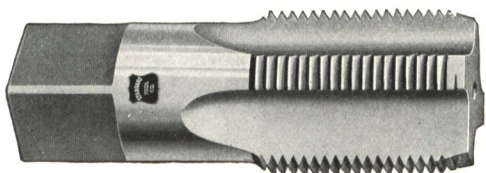
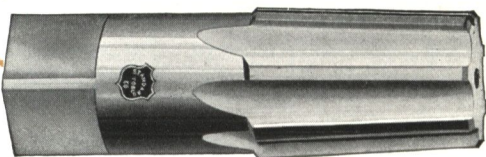
Fig. 5371. Straight Pipe Tap
Sizes and List Prices same as for Taper Taps

Fig. 5372. Taper Reamer

Taper Pipe Taps and Reamers

Taper $\frac{3}{4}$ Inch Per Foot

Right and Left Hand Taps furnished at the same list prices.

Right Hand Taps always furnished unless otherwise ordered.

Nominal Size Inches	Price Each	
	Briggs Standard	Whitworth Standard
$\frac{1}{8}$	1.12	1.12
$\frac{1}{4}$	1.25	1.25
$\frac{3}{8}$	1.50	1.50
$\frac{1}{2}$	1.87	1.87
$\frac{3}{4}$	2.50	2.50
1	3.12	3.12
$1\frac{1}{4}$	3.75	3.75
$1\frac{1}{2}$	4.62	4.62
2	6.25	6.25
$2\frac{1}{2}$	10.50	10.50
3	15.00	15.00
$3\frac{1}{2}$	22.00	22.00
4	33.00	33.00

Taper Pins



Fig. 5373. Taper Pin

No.	00	0	1	2	3	4	5	6	7	8	9	10
Diameter Large End, inch.	.136	.156	.172	.193	.219	.250	.289	.341	.409	.492	.591	.706
Approximate Fractional Sizes.	$\frac{9}{64}$	$\frac{5}{32}$	$\frac{11}{64}$	$\frac{3}{16}$	$\frac{7}{32}$	$\frac{1}{4}$	$\frac{19}{64}$	$\frac{11}{32}$	$\frac{13}{32}$	$\frac{1}{2}$	$\frac{19}{32}$	$\frac{23}{32}$
Length $\frac{1}{2}$ inch.	1.80	1.80	2.00	.....	.....	.....	.....	.....	.....	.....	.....	.....
Length $\frac{3}{4}$ inch.	1.80	1.80	2.00	2.10	2.30	2.50	2.75	3.00	.....	.....	.....	.....
Length 1 inch.	2.05	2.05	2.25	2.35	2.55	2.75	3.00	3.25	3.75	.....	.....	.....
Length $1\frac{1}{4}$ inches.	2.30	2.30	2.50	2.60	2.80	3.00	3.25	3.50	4.00	4.65	.....	.....
Length $1\frac{1}{2}$ inches.	2.55	2.55	2.75	2.85	3.05	3.25	3.50	3.75	4.25	5.00	7.00	9.00
Length $1\frac{3}{4}$ inches.	2.80	2.80	3.00	3.10	3.30	3.50	3.75	4.00	4.50	5.40	7.50	9.50
Length 2 inches.	3.05	3.05	3.25	3.35	3.55	3.75	4.05	4.35	4.75	5.80	8.00	10.00
Length $2\frac{1}{4}$ inches.	3.30	3.30	3.50	3.60	3.80	4.00	4.40	4.75	5.25	6.25	8.60	10.75
Length $2\frac{1}{2}$ inches.	3.55	3.55	3.75	3.85	4.05	4.25	4.75	5.20	5.75	6.75	9.20	11.50
Length $2\frac{3}{4}$ inches.	.....	3.80	4.00	4.10	4.30	4.50	5.10	5.70	6.25	7.25	9.80	12.25
Length 3 inches.	.....	4.05	4.25	4.35	4.55	4.75	5.45	6.25	6.75	7.80	10.50	13.25
Length $3\frac{1}{4}$ inches.	.....	.....	.....	4.60	4.80	5.00	5.80	6.75	7.25	8.40	11.20	14.25
Length $3\frac{1}{2}$ inches.	.....	.....	.....	4.85	5.05	5.25	6.15	7.25	7.75	9.00	11.90	15.25
Length $3\frac{3}{4}$ inches.	.....	.....	.....	.....	.....	5.50	6.50	7.75	8.25	9.60	12.60	16.25
Length 4 inches.	.....	.....	.....	.....	.....	5.75	6.85	8.25	8.75	10.20	13.30	17.25
Length $4\frac{1}{4}$ inches.	.....	.....	.....	.....	.....	.....	.....	8.75	9.25	10.80	14.00	18.25
Length $4\frac{1}{2}$ inches.	.....	.....	.....	.....	.....	.....	.....	9.25	9.75	11.40	14.70	19.25
Length $4\frac{3}{4}$ inches.	.....	.....	.....	.....	.....	.....	.....	9.75	10.25	12.00	15.40	20.25
Length 5 inches.	.....	.....	.....	.....	.....	.....	.....	10.25	10.75	12.60	16.10	21.25
Length $5\frac{1}{4}$ inches.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	16.80	22.25
Length $5\frac{1}{2}$ inches.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	17.50	23.25
Length $5\frac{3}{4}$ inches.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	18.20	24.25
Length 6 inches.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	18.90	25.25

Taper $\frac{1}{4}$ inch to the foot. If ordering sizes other than those included in the above list, furnish the length and the size at the larger end.

Tap Wrenches

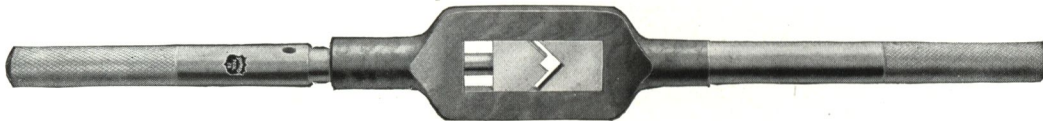


Fig. 5380. Tap Wrench

These wrenches have tool steel jaws and knurled handles. All parts are accurately fitted, and the wrenches are handsomely finished, well balanced, light in weight and strong.

No.	1	2	3	4	5
For Taps, inches.....	$\frac{1}{16}$ – $\frac{1}{4}$	$\frac{3}{16}$ – $\frac{1}{2}$	$\frac{1}{4}$ – $\frac{3}{4}$	$\frac{3}{8}$ –1	$\frac{3}{4}$ –1½
Length, inches.....	7	10½	15	20	42
Each.....	1.50	2.00	2.50	3.50	8.00

Improved Drill Chucks

This Chuck has no projecting jaws, and the plate prevents the use of larger work than the Chuck is designed for. It is very substantial, guaranteed to hold true and not injure the shank of the Drill. It holds round or square work. The jaws are guided by three strong gibs, and the screws are larger than in any Chuck of similar size and type. The jaws and screws are of tool steel, carefully tempered. The hole in the hub is made to fit a taper arbor, but can be bored out and threaded to a special templet at small cost.

Number of Chuck	Price Each	Diameter Inches	Length Over All Inches	Capacity Inches	Size of Tapered Hole in Hub
00	6.00	$1\frac{3}{8}$	$2\frac{3}{32}$	0 to $\frac{1}{4}$	.533x.587x $\frac{7}{8}$ in. deep
0	6.50	$1\frac{11}{16}$	$2\frac{15}{32}$	0 to $\frac{3}{8}$	.533x.596x1 in. deep
1	7.00	$2\frac{3}{16}$	$2\frac{13}{16}$	0 to $\frac{1}{2}$	.533x.596x1 in. deep
2	8.00	$2\frac{7}{8}$	$3\frac{3}{8}$	0 to $\frac{3}{4}$	.750x.810x1½ in. deep
3	10.00	$3\frac{7}{16}$	$4\frac{1}{4}$	0 to 1	.876x.967x1½ in. deep

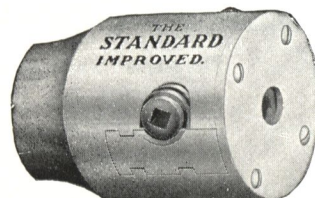


Fig. 5381. Drill Chuck

Star Chucks

Have three jaws, opening with springs which are protected from injury and will not get out of order. Grip tenaciously and center accurately round shanks.



Fig. 5382. Star Chuck

No.	4	5	6	7
Capacity.....	0– $\frac{3}{16}$	0– $\frac{1}{4}$	0– $\frac{3}{8}$	0– $\frac{1}{2}$
Dimensions of Shank, inches	$1\frac{1}{2}$ x $\frac{1}{2}$	$1\frac{1}{2}$ x $\frac{1}{2}$	$1\frac{1}{2}$ x $\frac{1}{2}$	$1\frac{1}{2}$ x $\frac{1}{2}$
Price, each.....	1.15	1.25	2.00	2.50

Chain Drill

No. 717. Automatic, Self-Regulating Feed, or may be fed by hand. Ball bearing. Four feet of stout chain. Length of main spindle $8\frac{1}{2}$ inches. Weight $3\frac{1}{2}$ pounds. Diameter of hole in socket $\frac{1}{2}$ inch. Each..... 2.00

Chucks for Chain Drills

Master Chuck is for holding round shanks from $\frac{1}{8}$ to $\frac{1}{2}$ inch diameter, bit stock and No. 1 Morse Taper Shanks.

Price, each..... 1.40

Star Chuck is for holding round shanks from 0 to $\frac{1}{2}$ inch in diameter. Jaws are operated by springs that are protected from injury and will not get out of order.

Price, each..... 2.40



Fig. 5383 Master Chuck



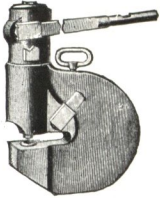
Fig. 5384 Star Chuck



Fig. 5385 Chain Drill

Dudgeon Hydraulic Punches

Hydraulic Head Punch

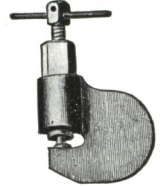
Fig. 5390
Head Punch

The Head Punch (so called, as it has a head like the jack), is a great improvement upon the hydraulic screw punch. It will do double the work in the same time, will keep in repair many times as long, and is much more easily packed. It is fitted with a pinion meshing into a rack cut on the ram, to withdraw punch from metal after punching. This has since become generally adopted.

Hydraulic Screw Punch

This Punch is so well known to the trade that a description is unnecessary; it is and has been in very general use with most boiler makers, bridge builders, etc., for years. All genuine Dudgeon Punches are made from solid steel forgings.

List prices same as for Head Punches.

Fig. 5391
Screw Punch

Price List Regular Sizes

No.	Thickness Inch	Rivet Inch	*Gap Inches	Weight Pounds	Price	*Gap Inches	Weight Pounds	Price
10	1/4	5/8	2	50	70.00	3 1/2	55	80.00
11	3/8	5/8	2	65	80.00	3 1/2	70	90.00
12	1/2	5/8	2	70	100.00	3 1/2	105	110.00
13	1/2	3/4	2	85	120.00	3 1/2	110	130.00
14	5/8	3/4	2	110	150.00	3 1/2	140	170.00
15	3/4	7/8	2	150	200.00	3 1/2	180	220.00
17	1	1	2	280	250.00	4	350	275.00

*Gap refers to distance from edge of sheet to center of hole. Greater depth of gap to order.

Punches and Dies

Fig. 5392

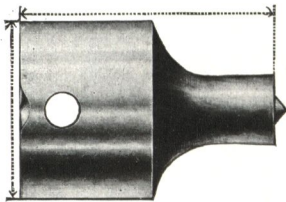


Fig. 5392. Punch

No.	Diameter Inches	Height Inches	Size, Inch	Price
1	15/16	1 5/8	1/4 to 3/4	1.50
2	1 3/8	2	1/4 to 7/8	1.50
3	1 5/8	2 3/4	1/2 to 1	2.00

Fig. 5393

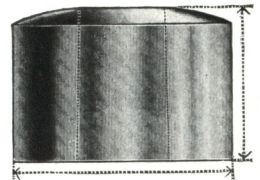


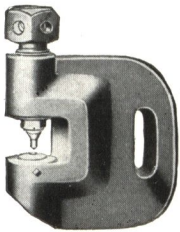
Fig. 5393. Die

No.	Diameter Inches	Height Inches	Sizes, Inch	Price
1	1 3/8	1	1/4 to 3/4	1.50
2	1 5/8	1 1/8	1/4 to 7/8	1.50
3	2	1 1/4	1/2 to 1	2.00

In ordering Punches and Dies, give number as shown in first column or diameter of shank of punch or outside diameter of die, and size of rivet or bolt for which holes are to be punched.

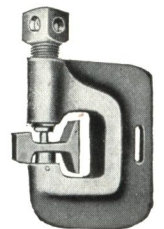
Screw Punches

Fig. 5394 is a high grade steel casting having a guaranteed tensile strength of 80,000 pounds per square inch. In ordering it is only necessary to give the size of rivet for which they are to be used, as they are made to punch holes about 1/16 inch over size marked on them, which allows proper clearance to admit rivet.

Fig. 5394
Steel Screw Punch

No.	0	1	2	3	3 1/2	4
Thickness of Iron, inches	1/4	3/8	1/2	3/4	3/4	1
Size of Rivet, inch	1/2	1/2	3/4	3/4	3/4	1
Gap, inches	1 1/2	1 1/2	2	2 1/2	4	4 1/4
Weight, pounds	15	27	40	60	90	145
Price	24.00	30.00	40.00	60.00	75.00	90.00

Punch and Dies, per pair: No. 0, 3.50; Nos. 1 and 2, 4.00; Nos. 3 and 3 1/2, 5.00; No. 4, 3/4 inch Punch and under, each 2.50; No. 4, 7/8 inch Punch and over, each, 3.50; No. 4 Screw Punch Dies of all sizes, each, 3.50.

Fig. 5395
Structural Iron
Punch

Rail and Structural Iron Punch

Fig. 5395 is designed for punching street rails and structural steel. One punch and die fitted in each machine. Extra punches and dies charged for according to shape of material to be punched. In ordering punches and dies state whether the given size denotes diameter of hole to be punched or the size rivet for which they are to be used.

No.	10	12	14	16
Depth of Gap, inches	2 1/4	3	4	5 1/2
Height of Gap, inches	3 1/2	4 1/2	4 1/2	6 1/2
Capacity, inches	3/4 in 3/8	3/4 in 1/2	1 in 1/2	1 in 1 1/2
Weight, pounds	55	80	150	180
List Price	25.00	30.00	44.00	50.00

Files

List Prices—Opposite Page



Fig. 5400. Slim Taper



Fig. 5401. Taper



Fig. 5402. Square



Fig. 5403. Blunt Band



Fig. 5404. Mill



Fig. 5405. Flat Bastard



Fig. 5406. Half Round



Fig. 5407. Round



Fig. 5408. Half Round Wood Rasp

Sizes below 4 inches, not extended, take 4-inch price. Half inches not specified, take next higher full inch price. Dead Smooth, double the price of Bastard Cut. One Round Edge, advance $12\frac{1}{2}$ per cent. All lengths above those listed, advance 20 per cent. on next lower inch price. Cuts not specified, made upon regular blanks, advance 1-inch on respective kinds and nearest cut.

Blacksmiths' Anvils

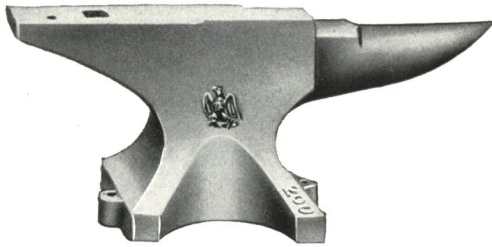


Fig. 5420. Blacksmiths' Anvil

Small Anvils or Minims

Nos.	Weight Pounds	Dimensions				List Price
		Face		Hardie Hole	Horn Length	
		Length Inches	Width Inches	Sq. In.	Inches	
000	1/2	2 1/4	1 1/2		1 1/2	1.00
1	8	5 3/4	1 3/4	3/8	3 1/2	3.50
2	20	6 1/4	2 1/4	1/2	4	4.75
3	30	7 1/4	2 1/4	1/2	4	5.50
4	40	8 3/4	3	5/8	5 1/4	6.00
5	50	9 1/4	3	5/8	6 1/2	6.50
6	60	10	3	5/8	6 1/2	7.50
7	70	10 1/2	3 1/4	5/8	6 1/2	8.50

Weight Pounds	Length Inches	Face		Horn Length Inches
		Width Inches	Cutter Hole Sq. In.	
80	10 1/2	3 1/4	5/8	7 1/2
90	11	3 1/4	5/8	7 1/2
100	12	3 1/2	3/4	8 1/2
110	12 3/4	3 1/2	3/4	8 1/2
120	12 3/4	3 1/2	3/4	8 1/2
130	13 1/2	4	3/4	8 1/2
140	14	4	7/8	8 1/2
*150	14 1/2	4	7/8	10
150	15	4	7/8	10
160	15	4 1/4	1	10
170	15	4 1/4	1	10
180	15 1/2	4 1/4	1	10
200	16 1/2	4 3/4	1 1/8	11 1/2
225	16 1/2	4 3/4	1 1/8	11 1/2
250	17 1/4	5 1/4	1 1/4	11 1/2
275	17 3/4	5 1/4	1 1/4	11 1/2
300	19	5 1/4	1 1/4	11 1/2
350	20	6	1 3/8	13
400	21	6	1 3/8	13
450	22	6	1 3/8	13
500	23	6 1/2	1 1/2	14 1/2
600	23	6 1/2	1 1/2	14 1/2
800	25	7 1/4	1 5/8	16

*Horseshoers' Special Anvil. Furnished at market prices.

Swages, Fullers and Flatters

Top Swages

Stock Sizes, inches	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8
Weight, pounds	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	3 1/4	3 1/4
Price Each	.75	.75	.75	.75	.75	.85	1.00	1.00
Stock Sizes, inches	1	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	2
Weight, pounds	3 1/4	3 3/4	3 3/4	3 3/4	4 1/4	4 3/4	4 3/4	4 3/4
Price Each	1.00	1.15	1.15	1.30	1.30	1.45	1.45	1.45
Stock Sizes, inches	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4	4
Weight, pounds	5	5 1/2	5 1/2	5 1/2	6	6	6 3/4	6 3/4
Price Each	1.60	1.75	1.80	1.95	2.10	2.10	2.25	2.25

Bottom Swages

Stock Sizes, inches	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8
Weight, pounds	2	2	2	2	2 1/2	2 1/2	2 1/2	2 1/2
Price Each	.75	.75	.75	.75	.75	.85	1.00	1.00
Stock Sizes, inches	1	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	2
Weight, pounds	3	3	3	3 1/2	3 1/2	4	4 1/2	4 1/2
Price Each	1.00	1.15	1.15	1.30	1.30	1.30	1.45	1.45
Stock Sizes, inches	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4	4
Weight, pounds	5 1/2	5 1/2	5 1/2	5 1/2	7	7	7	7
Price Each	1.60	1.75	1.80	1.95	2.10	2.10	2.25	2.25

Top Fullers

Stock Sizes, inches	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1 1/8
Weight, pounds	2 1/2	2 1/2	2 3/4	2 3/4	2 3/4	2 3/4	2 3/4	3	3
Price Each	.75	.75	.85	.85	.85	.85	1.00	1.00	1.00
Stock Sizes, inches	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	1 7/8	2	2 1/4	2 1/2
Weight, pounds	3 1/2	3 1/2	3 1/2	3 1/2	4	4	4 1/2	5 1/2	5 1/2
Price Each	1.05	1.05	1.20	1.20	1.30	1.30	1.45	1.65	1.75

Bottom Fullers

Stock Sizes, inches	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	1 1/8
Weight, pounds	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/2	2 1/2	2 1/2	2 1/2	3 1/2
Price Each	.75	.75	.85	.85	.85	.85	.85	1.00	1.00	1.00
Stock Sizes, inches	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	1 7/8	2	2 1/4	2 1/2	2 3/4
Weight, pounds	3 1/2	3 1/2	3 1/2	4	4	4	4 1/2	5 1/4	5 1/4	6 1/2
Price Each	1.05	1.05	1.20	1.20	1.30	1.30	1.45	1.65	1.75	2.10

Flatters

Square

Stock Sizes, inches	1	1 1/2	2	2 1/4	2 1/2	2 3/4	3	3 1/2	4
Weight, pounds	3/4	1	2	2 1/4	3 1/4	3 1/2	4 1/2	6	8
Price Each	.75	.75	.90	1.05	1.20	1.35	1.50	2.10	3.00

Round

Stock Sizes, inches	1 3/4	2	2 1/2	3	3 1/2
On Special Order	1 1/2	2	2 1/2	3	3 1/2
Weight, pounds	1 1/2	2	2 1/2	3	3 1/2
Price Each	.75	.90	1.20	1.50	2.10

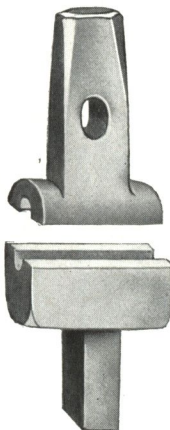
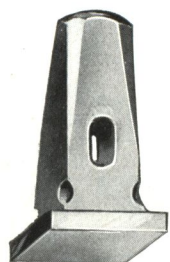
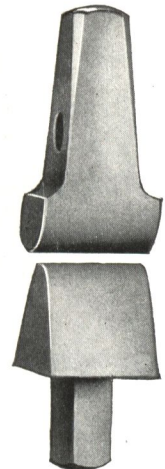
Fig. 5421
Top and Bottom
Swages

Fig. 5423. Flatter

Fig. 5422
Top and Bottom
Fullers

Hammers



Fig. 5430. Nail Hammer

Nail Hammers

Size.....	0	1	1½	2	3	4
Weight.....	1 lb. 12 oz.	1 lb. 4 oz.	1 lb.	13 oz.	7 oz.	5 oz.
Per Dozen....	12.50	9.00	8.50	8.00	7.50	7.25

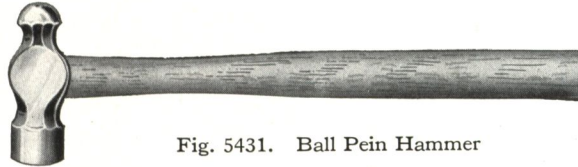


Fig. 5431. Ball Pein Hammer

Size.....	00000	0000	000	00	0	1	2	3	4	5	6	7	8	9
Weight...	4 oz.	6 oz.	8 oz.	12 oz.	1 lb.	1—4	1—8	1—12	2 lb.	2—4	2—8	2—12	3 lb.	3—8
Per Dozen.	12.00	12.00	12.00	12.00	12.50	13.50	14.50	15.50	16.50	17.50	19.00	20.50	22.00	24.00



Fig. 5432. Straight Pein Hammer

Size.....	00000	0000	000	00	0	1	2	3	4	5	6	7	8	9
Weight...	4 oz.	6 oz.	8 oz.	12 oz.	1 lb.	1—4	1—8	1—12	2 lb.	2—4	2—8	2—12	3 lb.	3—8
Per Dozen.	12.00	12.00	12.00	12.00	12.50	13.50	14.50	15.50	16.50	17.50	19.00	20.50	22.00	24.00



Fig. 5433. Cross Pein Hammer

Size.....	00000	0000	000	00	0	1	2	3	4	5	6	7	8	9
Weight...	4 oz.	6 oz.	8 oz.	12 oz.	1 lb.	1—4	1—8	1—12	2 lb.	2—4	2—8	2—12	3 lb.	3—8
Per Dozen.	12.00	12.00	12.00	12.00	12.50	13.50	14.50	15.50	16.50	17.50	19.00	20.50	22.00	24.00

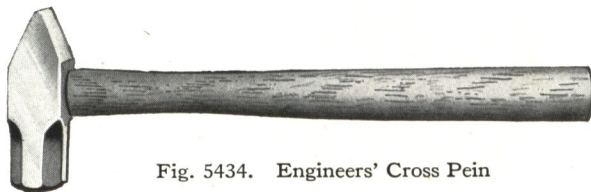


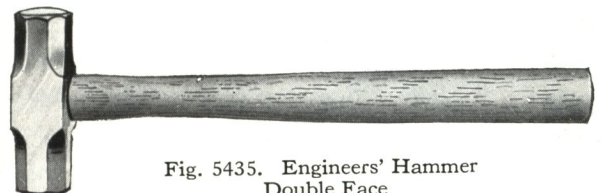
Fig. 5434. Engineers' Cross Pein

Engineers' Hammers—Cross Pein

Size.....	0	1	2	3
Weight.....	1 lb. 2 oz.	1—10	2 lb.	2—8
Per Dozen.....	12.00	13.00	14.00	15.00
Size.....	4	5	6	
Weight.....	3 lb.	3—8	4—8	
Per Dozen.....	16.00	17.00	19.00	

Engineers' Hammers—Double Face

Size.....	1	2	3	4
Weight.....	1 lb. 8 oz.	2—6	3 lb.	3—10
Per Dozen.....	14.50	16.50	18.00	19.50

Fig. 5435. Engineers' Hammer
Double Face

Hammers and Chisels

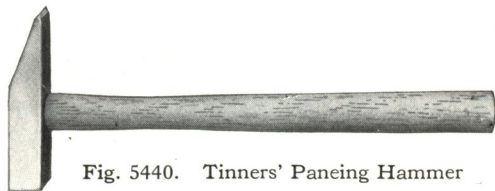


Fig. 5440. Tinnery's Panning Hammer

Size.....	0	1	2	3	4
Weight.....	5 oz.	8 oz.	12 oz.	1 lb.	1-4
Per dozen...	5.75	6.00	6.25	6.75	7.2



Fig. 5441. Riveting Hammer

Size.....	0	1	2	3	4	5	6	7
Weight.....	4 oz.	7 oz.	9 oz.	12 oz.	15 oz.	1-2	1-6	1-10
Per dozen...	5.50	5.75	6.00	6.25	6.50	7.00	7.50	8.00

Boiler Picks or Scaling Hammers



Fig. 5442. Boiler Pick

Weight, pounds.....	1	1½	2
Length, inches.....	5	6	6¾
Width of Bits, inches.....	1⅜	1¼	1⅜
Price, each.....	.75	1.15	1.50

Striking and Drilling Hammers

Weight, pounds: 2, 2½, 3, 3½, 4, 4½, 5, 6, 7, 8, 9, 10, 12, 14, 16, 18, 20, 22, 24.
 Length, 4-pound, 6⅛ inches. Diameter Faces, 1½ inches.
 Length, 8-pound, 7⅜ inches. Diameter Faces, 1⅞ inches.
 Length, 16-pound, 8½ inches. Diameter Face, 2⅜ inches.
 Dimensions of other weights and prices on application.



Fig. 5443. Striking Hammer

Blacksmiths' Chisels



Fig. 5444. Cold



Fig. 5445. Hot

Blacksmiths' Chisels

The Catalogue size is the width of the cutting edge

Fig. 5444. Cold

Stock Sizes, inches.....	1	1⅛	1¼	1⅜	1½	1⅝	1¾	2
Stock at Eye, inches.....	1	1⅛	1¼	1⅜	1½	1⅝	1¾	2
Length, inches.....	4⅞	5¼	5⅞	6⅛	6¼	6⅞	7⅜	7⅞
Weight, pounds.....	1	1½	2	2½	3	4	5	6
Price, each.....	.45	.55	.60	.75	.90	1.20	1.50	1.80

Fig. 5445. Hot

Stock Sizes, inches.....	1	1⅛	1¼	1⅜	1½	1⅝	1¾	2
Stock at Eye, inches.....	1	1⅛	1¼	1⅜	1½	1⅝	1¾	2
Cutting Edge, inches.....	1⅜	1½	1⅝	1¾	2	2⅛	2¼	2½
Length, inches.....	6	6¾	7⅜	7¾	8¼	9	9¾	10¼
Weight, pounds.....	1	1½	2	2½	3	4	5	6
Price, each.....	.45	.55	.60	.75	.90	1.20	1.50	1.80

Machinists' Chisels

Hand Cold



Fig. 5446. Hand Cold Chisel

Extra quality and finish. Points and heads polished. Balance japanned

Size, inches.....	¼ x 5	⅜ x 5½	½ x 6	½ x 10	½ x 12	⅝ x 7	⅝ x 12	⅝ x 16	¾ x 8	¾ x 10	¾ x 12
Per dozen.....	3.60	3.60	3.60	3.25	3.85	4.30	6.25	8.40	6.90	6.70	8.00
Size, inches.....	¾ x 16	¾ x 18	7⁄8 x 8½	7⁄8 x 12	7⁄8 x 16	7⁄8 x 18	7⁄8 x 24	1 x 9	1 x 12	1 x 16	1 x 18
Per dozen.....	10.10	12.60	11.10	10.50	13.85	16.80	21.00	13.50	13.45	17.20	20.15

Machinists' Chisels

Continued



Fig. 5450. Cape



Fig. 5451. Round Nose



Fig. 5452. Diamond Point

Extra quality and finish. Points and heads polished. Balance of tool has a black finish

Cape

Width of Bit, inches.....	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1
Size of Stock, inches.....	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{7}{8}$	1	1
Length, inches.....	5 $\frac{1}{2}$	6	7	7	7	7 $\frac{1}{2}$	7 $\frac{1}{2}$	7 $\frac{1}{2}$	8	8 $\frac{1}{2}$
Per dozen.....	3.00	3.00	3.25	3.25	3.50	5.15	5.40	7.15	9.60	10.00

Round Nose

Side Point, inches.....	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1		
Size of Stock, inches.....	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{7}{8}$	1	1		
Length, inches.....	6 $\frac{3}{4}$	7	7	7	7 $\frac{1}{4}$	7 $\frac{1}{2}$	8	8		
Per dozen.....	3.10	3.25	3.25	5.00	5.55	7.55	9.70			

Diamond Point

Size of Point, inches.....	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$				
Size of Stock, inches.....	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{7}{8}$	1	1		
Length, inches.....	7 $\frac{1}{4}$	7 $\frac{1}{4}$	7 $\frac{3}{4}$	8	8 $\frac{1}{4}$	8 $\frac{1}{2}$	8 $\frac{1}{2}$	8 $\frac{1}{2}$		
Per dozen.....	3.65	3.65	5.40	8.10	8.80	11.20				



Fig. 5453. Cold Chisel Set



Fig. 5454. Hand Punch

Cold Chisel Sets

These chisels are made from a high grade crucible steel, insuring good results in forging and tempering.

They are made up in sets of five tools:

1. Flat chisel.
2. Calking chisel, suitable for calking seams and rivets of boilers.
3. Bent grooving chisel for cutting oil ways in engine brasses and gears.
4. Diamond point.
5. Narrow cape chisel.

Made of $\frac{5}{8}$ and $\frac{3}{4}$ -inch steel. Average length is about 8 inches.

Per Set of 5 Chisels..... 4.00



Fig. 5455. Machine Punch

Hand Punches

These are heavier than Machine Punches. Have a black finish over all

Diameter of Point, inches.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1
Size of Stock, inches.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	1	1
Length, inches.....	6	6 $\frac{1}{2}$	7 $\frac{1}{2}$	8 $\frac{1}{4}$	8 $\frac{3}{4}$	9 $\frac{1}{4}$	9 $\frac{1}{4}$	9 $\frac{1}{4}$
Per dozen.....	1.65	1.90	3.35	4.20	6.30	8.80		

Machine Punches—Regular

Diameter of Point, inches.....	$\frac{3}{32}$	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$
Diameter of Stock, inches.....	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
Length, inches.....	6	6	6	6	6	6	6	6
Per dozen.....	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90

Turret Drive Punches

Made in 3 sizes. No. 2 cutting holes, $\frac{3}{16}$, $\frac{1}{4}$ and $\frac{5}{16}$ inch, is designed for the harness trade and other work of a similar character. No. 1, cutting $\frac{3}{8}$, $\frac{7}{8}$ and $\frac{1}{2}$ inch holes, and No. 3, cutting $\frac{3}{8}$, $\frac{7}{8}$ and $\frac{1}{2}$ -inch holes, are for general use, mill and factory work, cutting leather belting, automobile gaskets, etc.

These punches combine speed and efficiency. Extra tubes can be supplied when required.

No. 1, per dozen.....	3.00
No. 2, per dozen.....	15.00
No. 3, per dozen.....	15.00

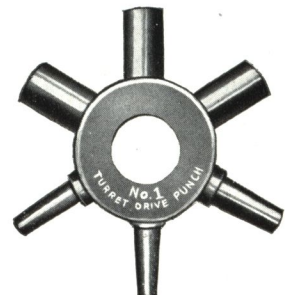


Fig. 5456. Turret Drive Punch

Bolt and Wire Clippers



Fig. 5460. Easy No. 1 Bolt Clipper
Length, 24 inches. Cuts $\frac{3}{8}$ -inch Bolts, each 5.00



Fig. 5461. Easy No. 2 Bolt Clipper
Length, 30 inches. Cuts $\frac{1}{2}$ -inch Bolts, each 7.00



Fig. 5462. Boston Electric Wire Cutter with Automatic Search Hook and Insulated Handles, for firemen.

Length, 26 $\frac{1}{4}$ inches. Opening to $\frac{3}{4}$ inch. Weight, 5 $\frac{1}{2}$ pounds.
Each 12.00



Fig. 5463. New Easy No. 0 Bolt Clipper
Length, 18 inches. Cuts Bolts, $\frac{5}{16}$ inch, each 3.75



Fig. 5464. New Easy No. 1 Bolt Clipper
Length, 24 $\frac{1}{2}$ inches. Cuts Bolts, $\frac{3}{8}$ inch, each 5.00



Fig. 5465. New Easy No. 2 Bolt Clipper
Length, 30 inches. Cuts Bolts, $\frac{1}{2}$ inch, each 7.00



Fig. 5466. New Easy No. 3 Bolt Clipper
Length, 36 inches. Cuts Bolts, $\frac{5}{8}$ inch, each 9.00

Spring Punches

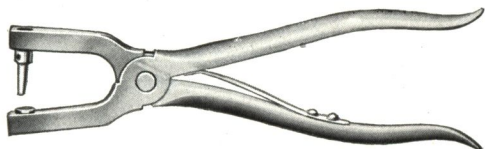


Fig. 5467. Spring Punch

Made from semi-steel castings, with improved easy working joints. Tubes from solid stock, tempered by hand, and springs of highly tempered steel. Tools finely finished and guaranteed in every respect.

No. 225	Extra Finish, with Screw Tubes, per dozen	8.15
No. 226	Extra Finish, with Drive Tubes, per dozen	6.25
No. 228	Regular, per dozen	3.75
	Extra for Nickel-plating, per dozen	1.00

Tubes for Spring Punch—Fig. 5467



No. 251	Drive, Size 1, 2, 3, 4, 5, 6, 7, 8, 9, 10. Price per dozen	1.15
No. 252	Screw, Size 1, 2, 3, 4, 5, 6, 7, 8, 9, 10. Price per dozen	1.50

Revolving Punches

Made of semi-steel castings, with improved easy working joints. Tubes from solid stock, each tube being tempered by hand and the turrets made from solid steel rods, with highly tempered steel springs. Each tool finely finished and fully guaranteed.

No. 341	Extra Finish, 6 Screw Tubes, 1, 2, 3, 4, 5, 6, per doz	22.50
No. 342	Extra Finish, 6 Drive Tubes, 2, 4, 6, 8, 9, 10, per doz	17.50
No. 351	Extra Finish, 4 Screw Tubes, 3, 4, 5, 6, per doz	20.00
No. 352	Extra Finish, 4 Drive Tubes, 4, 6, 8, 10, per doz	15.00
No. 344	Regular Finish, 6 Drive Tubes, 2, 4, 6, 8, 9, 10, per doz	11.25
No. 354	Regular Finish, 4 Drive Tubes, 4, 6, 8, 10, per doz	8.75

Extra for Nickel-plating, \$1.00 per dozen net.

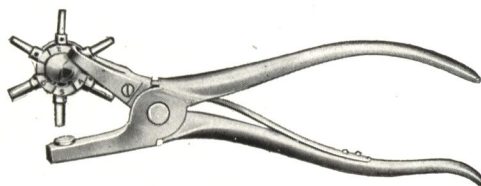


Fig. 5468. Revolving Punch

Tubes for Revolving Punches



No. 371	Drive, Size, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, per dozen	1.15
No. 372	Screw, Size, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, per dozen	1.50

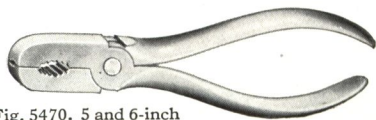


Fig. 5470. 5 and 6-inch

Burner Pliers

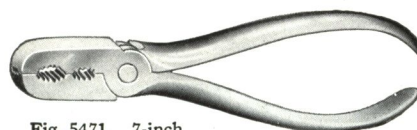


Fig. 5471. 7-inch

Size, inches.....	5	6	7
Polished, per dozen.....	3.05	3.50	4.10
Black, per dozen.....	2.80	3.25	3.85

Gas Pliers

Size, inches.....	7	8	9	10	11	12	14
Polished, per dozen.....	4.10	4.70	5.25	6.10	7.00	7.60	10.00
Black, per dozen.....	3.85	4.30	4.80	5.85	6.45	7.00	9.40

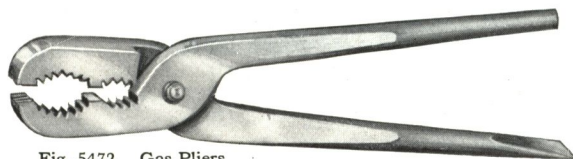


Fig. 5472. Gas Pliers

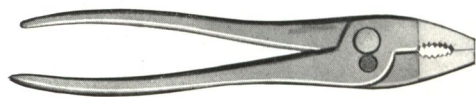


Fig. 5473. Slip Joint Pliers

Slip Joint Pliers

With wire cutter and knurled handles. An all-round useful tool for plumbers, automobilists, etc.

	6-inch	8-inch
No. 5 Polished Head, per dozen.....	5.00	6.10
No. 5NP Full Nicked, per dozen.....	6.10	7.25

Side Cutting Pliers—Box Joint, for Linemen, etc.

Size.....	5	6	7	8	9
Per dozen.....	12.50	13.50	17.00	20.00	35.00

Insulated Handles

Size.....	6	7	8
Per dozen.....	24.50	29.25	34.00

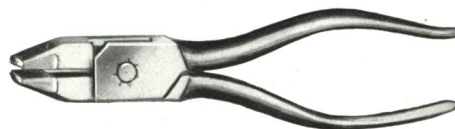


Fig. 5474. Side Cutting Pliers



Fig. 5475. Gas Fitters' Auger

Price: .50 for 1/4-inch auger measurement

Auger Size
Inches

5/8
3/4
7/8
1 1/4

Pipe Size
Inch

1/4
3/8
1/2
3/4

Auger Size
Inches

1 1/2
1 3/4
2
2 1/2

Pipe Size
Inches

1
1 1/4
1 1/2
2

Clark Expansive Bit With Two Cutters

Boring	Per Dozen
1/2 to 7/8 and 7/8 to 1 1/2 inch.....	18.00
7/8 to 1 3/4 and 1 3/4 to 3.....	26.00

Extra Cutters

Size.....	1/2-7/8	7/8-1 1/2	1 1/2-1 3/4	1 3/4-3
Dozen.....	3.00	3.75	5.25	6.00

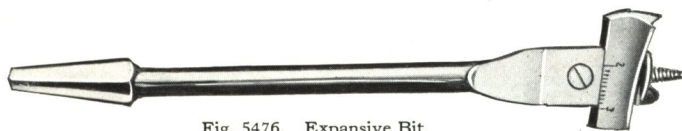


Fig. 5476. Expansive Bit

Champion



Fig. 5477. Champion Screw Driver

Screw Driver

Regular, Length Blade, inches.....	2 1/2	3	4	5	6	7	8	9	10	12
Regular, per dozen.....	3.00	3.50	4.25	5.00	6.00	7.00	8.00	9.00	10.00	12.00
Cabinet and Electrician, Blade, inches.....			2 1/2	3 1/2	4 1/2	5 1/2	6 1/2	8 1/2	10 1/2	12 1/2
Cabinet and Electrician, per dozen.....			3.00	3.50	4.50	5.50	6.50	8.00	9.50	11.00
Machinists, Length Blade, inches.....					12	15	18	24	30	
Machinists, per dozen.....					14.00	16.00	18.00	24.00	30.00	



Fig. 5478. Socket Punch

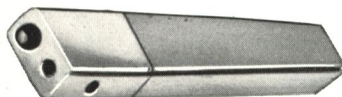


Fig. 5479. Rivet Set



Fig. 5479A. Round Belt Punch

Per Dozen	Each	No.	Size Hole	Copper Rivets	Per Dozen
7/16-1/2.....	10.00	15/16.....	2.75	00	9.00
1/2-5/8.....	11.00	13/16.....	3.50	0	9.00
5/8-3/4.....	12.00	11/16.....	3.75	1	7.50
3/4-7/8.....	13.00	3/4.....	4.00	2	7.50
7/8-1.....	14.00	23/16.....	4.25	3	6.00
1-1 1/4.....	25.00	21/16.....	4.75	4	6.00
1 1/4-1 1/2.....	32.00	3/4.....	5.25	5	4.50
		21/2.....	6.00	6	4.50
		23/4.....	7.50	7	3.75
		3.....	9.00	8	3.75

No. 1, 2, 3, 4, 5, per dozen.....	2.00
No. 6, 7, 8, 9, per dozen.....	2.25
No. 10, 11, 12, per dozen.....	3.25
No. 13, 14, per dozen.....	6.00

Oval Belt Punches

No. 4, 5, per dozen.....	5.25
No. 6, 7, 8, 9, 10, per dozen.....	5.75

Scraping and Packing Tools

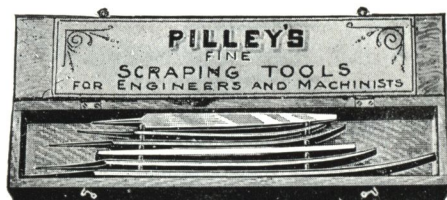


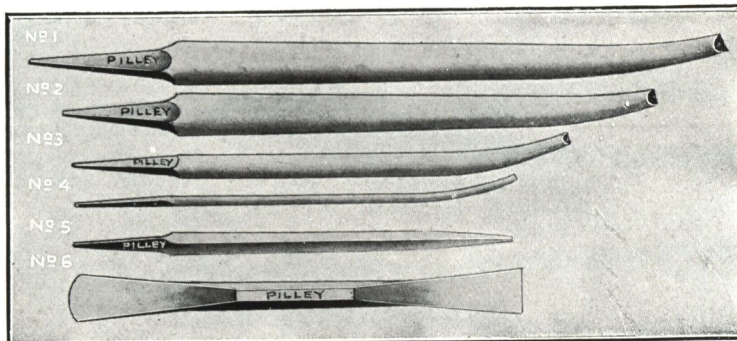
Fig. 5480. Scraping Tool Set

No. 1 Set

Set of 6 Scraping Tools in Oak Case.
Complete..... 2.50

No. 2 Set

Set of 6 Pilley Special Hollow Ground
Scraping Tools in Oak Case.
Complete..... 3.50



Tools Contained in Case Illustrated above

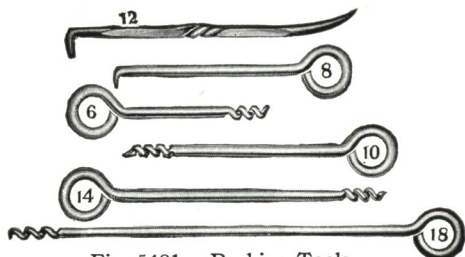


Fig. 5481. Packing Tools

Pilley Packing Tools

Will go into any valve rod, pump, or engine stuffing box.

These tools are made from a special tool steel, are warranted not to break in removing packing from stuffing boxes of engines, pumps, etc., and need only to be seen to be appreciated. Will withstand the roughest usage. Handsomely nickel-plated. Made of $\frac{3}{16}$, $\frac{1}{4}$ and $\frac{5}{16}$ -inch steel. Made 6, 8, 10, 12, 14, 18, 20 and 24 inches long.

Set of 4 Packing Tools, 8, 10, 12, 14-inch..... 1.50
Set of 6 Packing Tools, 6, 8, 10, 12, 14, 18-inch..... 2.25

Special large tools for packing elevators, etc.:

20-inch, each..... 1.00
24-inch, each..... 1.50

Flexible Steel Packing Hooks



Fig. 5482. Lightning Packing Hooks

Made from a special high grade flexible spring steel, finely tempered and carefully finished. Will remove packing from all size stuffing boxes without injury to the packing or the rods.

List Price Per Set of Six Hooks, as illustrated..... 2.90

Mechanics' Tools

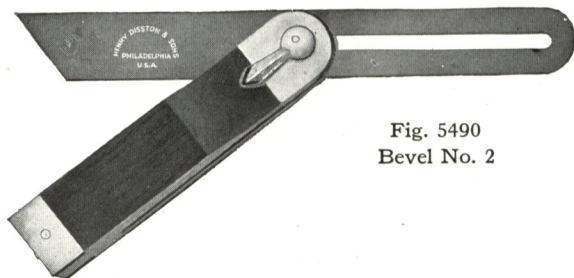


Fig. 5490
Bevel No. 2

Rosewood stock, heavy brass-plated. Blade tempered and blued. Can be furnished with thumb screw in place of lever tightener, if so ordered.

Size, inches....	5	8	10	12	14	*18
Per dozen.....	5.75	6.50	6.75	7.50	8.10	46.65

*Extra Heavy.



Fig. 5492
Bevel No. 3

Iron stock, nickel-plated flush screw, parallel edges, steel blade. A slight turn of the thumb screw operates unique mechanism for tightening or releasing blade.

Size, inches.....	6	8	10
Per dozen.....	4.85	6.20	6.75

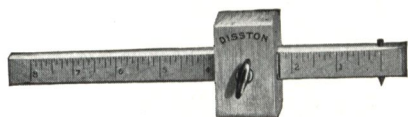


Fig. 5494. Gauge No. 76

No. 75 Hardwood, Iron Thumb Screw, Steel Point, per dozen.....	1.15
No. 76 Oval Bar, marked with Inches, Steel Point per dozen.....	1.25
No. 77 Head Plated, Oval Bar, marked with Inches, Steel Point, per dozen.....	2.50

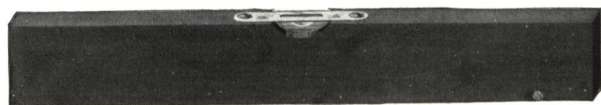


Fig. 5496. Level No. 150

Cherry wood, stained; size 12 inches by 1 7/8 inches by 7/8 inch. Nickel-plated top plate.

No. 150 Level only, made 12-inch only, per doz...	2.95
No. 155 Plumb and Level, 12-inch only, per doz...	5.75

Pocket Level No. 200



Fig. 5498. No. 200

Rosewood, made in 6-inch length only, per doz....	4.50
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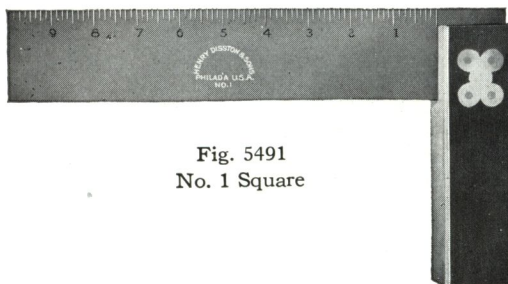


Fig. 5491
No. 1 Square

Rosewood stock, steel blade, tempered and blued

Size, ins..	3	4 1/2	6	7 1/2	8	9
Per doz...	4.10	4.65	6.20	6.70	7.00	8.65

Size, ins..	10	12	14	*15	*16	*18
Per doz...	9.35	11.50	13.50	14.50	18.30	19.50

*With Rest.

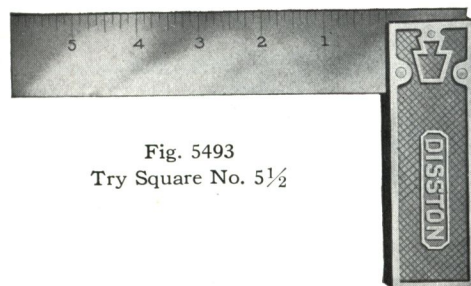


Fig. 5493
Try Square No. 5 1/2

Iron stock, nickel-plated steel blade, graduated to 1/8ths. Square inside and out.

Size, inches.....	2	4	6	8	10	12
Per dozen.....	2.00	2.45	2.80	3.55	4.65	5.50



Fig. 5495. Gauge No. 89 1/2

Boxwood, polished, mortise and marking, graduated stem, brass slide and thumb screw.

Per dozen.....	10.85
----------------	-------



Fig. 5497. Pocket Level No. 1

No. 1 Iron, Brass Top, per dozen.....	3.00
No. 2 Iron, Tinned Top, per dozen.....	2.85

Trowels

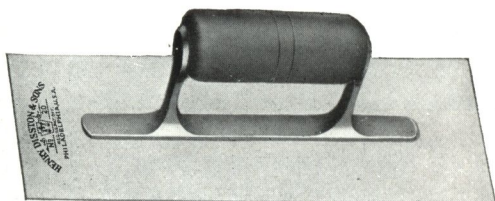


Fig. 5500. Plastering

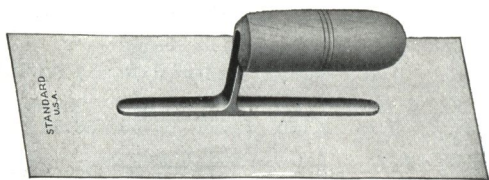


Fig. 5501. Cementers

Plastering Trowels

Size, inches.....	10	10½	11	11½	12
Per dozen.....	6.50	7.00	7.50	8.00	9.00

Cementers' Trowels—No. 20

Extra heavy blade, 16 gauge. Made of high grade crucible steel. Mounting $\frac{7}{8}$ inch wide and extends within 2 inches of the ends.

Length, inches.....	11	11½	12
Width, inches.....	4⅝	4⅞	5
Per dozen.....	17.00	18.25	19.75

Brick Trowels

Philadelphia and London Patterns

Size, inches.....	8	8½	9	9½	10	10½
Per dozen.....	6.25	6.50	6.75	7.00	7.25	7.50
Size, inches.....	11	12	12½	13	13½	14
Per dozen.....	7.75	8.25	8.50	8.75	9.25	9.50

New York Pattern No. 11

Extra quality crucible steel blade, carefully hardened and tempered, ground to a true and correct taper.

Size, ins....	7½	8	8½	9	9½	10	10½
Per doz....	9.50	10.00	10.50	11.00	11.50	12.00	12.50
Size, ins....	11	11½	12	12½	13	13½	14
Per doz....	13.00	13.50	14.00	14.75	15.50	16.25	17.00

Philadelphia Pattern No. 10

To meet the various requirements of the users, we make the Philadelphia Pattern Brick Trowels bearing the name of Disston, with handle or lift at three different heights.

Size, ins....	7½	8	8½	9	9½	10	10½
Per doz....	8.50	9.00	9.50	10.00	10.50	11.00	11.50
Size, ins....	11	11½	12	12½	13	13½	14
Per doz....	12.00	12.50	13.00	13.75	14.50	15.25	16.00

Regular Pointing Trowel
No. 15 Solid Shank

Size, inches.....	4	4½	5	5½	6	7
Per dozen.....	4.25	4.50	4.75	5.00	5.25	5.75

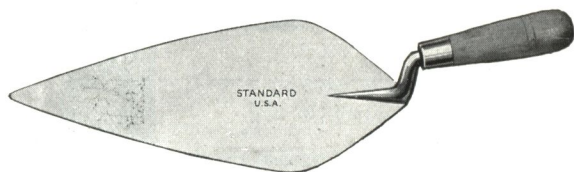


Fig. 5502. Brick

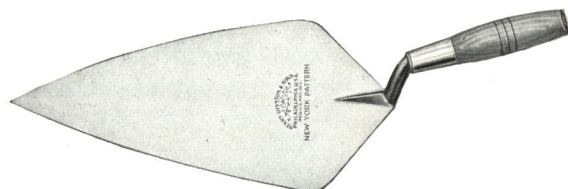


Fig. 5503. N. Y. Pattern

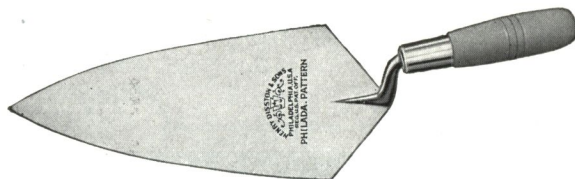


Fig. 5504. Philadelphia Pattern

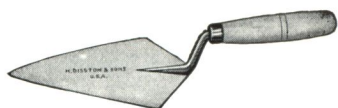


Fig. 5505. Regular Pointing

Disston Handy Saw Kit, No. 201

For Plumbers' use

The combination of blades in this set provides a handy kit for plumbers' use—14-inch Compass, 16-inch Special Blade, 18-inch Plumbers' Blade, and a 20-inch Hand Saw Blade.

14-inch Compass Saw, per dozen	2.75
16-inch Special Saw for Lead Pipe, per dozen	7.00
18-inch Plumbers' Saw, per dozen	11.00
20-inch 10-point Cross-cut, per dozen	11.00
Adjustable Handle, per dozen	4.50
Canvas Case, per dozen	6.00

The Plumbers' Saw Blade is specially tempered for cutting nails, spikes, bolts, gas pipe, soil pipe, etc. Put up in a durable canvas case, having strong leather-bound edges, and containing separate compartments for each blade, with a special pocket for the handle. Convenient and light to carry.

No. 201 Price, complete set. 3.50



Fig. 5510. Saw Kit No. 201

Nest of Saws, No. 3

Combining one each, Keyhole, Compass and Table or Pruning Saw

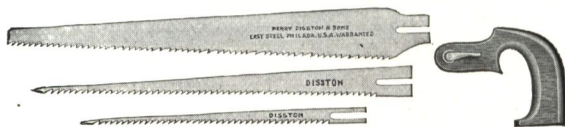


Fig. 5511

	No. 3 Nest Per Dozen	No. 1 Nest Without Pruning Blade Per Dozen
Handle and Tightener, No. 3.	1.75	1.75
Keyhole Blade, No. 3, 10-in...	2.00	2.00
Compass Blade, No. 3, 14-in.	2.75	2.75
Pruning Blade, No. 3, 16-in...	5.50	....
No. 3 Nest, complete	12.00	6.50

Packed three sets in box. Handle and Tightener only, packed one dozen in box.

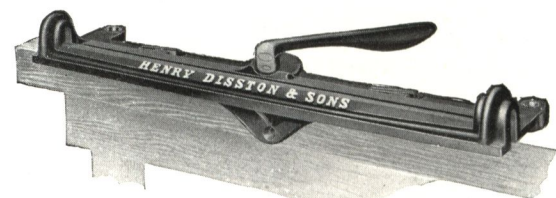


Fig. 5514. No. 5 Handy Saw Clamp

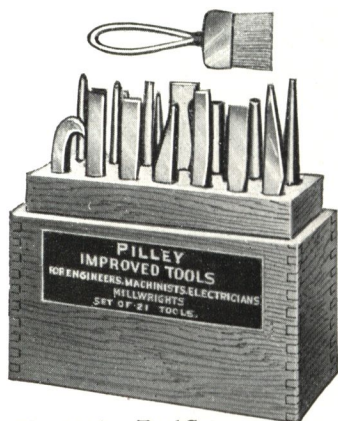


Fig. 5515. Tool Set

Cut represents our new set of 21 tools made up for use in general repair work. Strictly high-grade tools with all the good points of toolsmithing in their make-up. Conveniently arranged in finished oak case and every tool is highly polished and guaranteed.

Set Consists of

2 Cape Chisels.	1 Oil Groove Scraping Tool.
3 Cold Chisels.	1 Square Punch.
1 Diamond Point Chisel.	2 Rivet Punches.
1 Round Nose Cape Chisel.	1 Nail Set.
1 Half Cape Chisel.	1 Pick Punch.
1 Sheet Metal Chisel.	1 Center Punch.
1 Scribe.	1 Drift.
1 Bent Grooving Chisel.	1 Round Point Flat Chisel.
1 Wire Brush	
No. 3 Set of 21 Tools, black finish	8.00
No. 4 Set of 21 Tools, polished	10.00
No. 5 Set of 21 Tools, blue steel	10.00

Compass Saw, No. 2

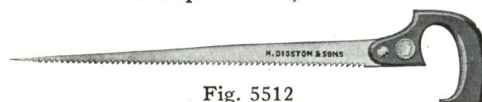


Fig. 5512

Apple Handle, Brass Screws

Length, inches	10	12	14	16	18
No. 2, per dozen	4.25	4.50	4.75	5.00	5.25

Keyhole Saw and Pad, No. 10



Fig. 5513

No. 10 Keyhole Blade, per dozen	1.40
No. 10 Handle, per dozen	1.00
No. 10 Complete, per dozen	2.40

No. 5 Handy Saw Clamp

Fastened to bench by screws

Length over all, 14 3/4 inches. Filing length of jaw, 13 inches.
Weight, 3 3/4 pounds.

No. 5, Japanned, per dozen. 10.00

Tool Set, Fig. 5515

Hack Saw Frames and Blades



Fig. 5520. Hack Saw

Fig. 5520. Polished and nickeled steel frame. Black composition pistol grip handle that fits any hand. Perfectly balanced frame with extra strength in the middle of the back. Blades faceable in four directions. Adjustable for blades 8 to 12 inches. Depth under back, $3\frac{1}{2}$ inches. Price, each 1.50



Fig. 5521. Hack Saw

Fig. 5521. Similar to Fig. 5520 but of heavier stock and with a sheath upon the back. Price, each 1.50

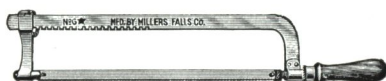


Fig. 5522. Hack Saw

Fig. 5522. Cocobolo handle. Nickeled steel stock, stiff strong back. Quickly adjustable for blades 6 to 12 inches. Blades are strained by turn of handle and are faceable in four directions. Depth under back, $2\frac{3}{4}$ inches. Price, each 1.30



Fig. 5523. Hack Saw

Fig. 5523. A light, stiff nickeled steel frame with stained hardwood handle. Adjustable for blades 8 to 12 inches. Blades strained by thumb nut and faceable in four directions. Depth under back, $2\frac{1}{2}$ inches. Price, each70

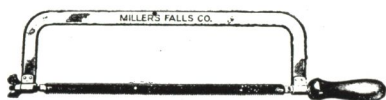


Fig. 5524. Hack Saw

Fig. 5524. A light, stiff frame of $\frac{5}{32}$ x $\frac{5}{8}$ -inch steel stock, nickeled; stained hardwood handle. Blade strained by turning thumb nut and may be faced in four directions.

Nos.	124	125	126
Capacity, inches	8	10	12
Depth under Back, inches	$3\frac{1}{8}$	$3\frac{1}{8}$	$3\frac{1}{8}$
Per dozen	5.00	5.50	6.00



Fig. 5525. Hack Saw

Fig. 5525. Polished and nickeled frame of stiff heavy steel, $1 \times \frac{1}{4}$ -inch, rare tropical wood handle. Blades strained by turning of the handle; may be faced in four directions. Capacity, 12 inches. Depth under back, $5\frac{1}{4}$ inches. Per dozen 19.50

Star Hack Saw Blades

For Hand Use



Fig. 5526. Hand

Size, inches	Teeth, per inch	Price, per gross
6 x $\frac{3}{8}$ x .022	14—24	7.00
7 x $\frac{3}{8}$ x .022	14—24	7.50
8 x $\frac{3}{8}$ x .022	14—24	8.00
9 x $\frac{3}{8}$ x .022	14—24	9.00
10 x $\frac{1}{2}$ x .022	14—24	10.00
11 x $\frac{1}{2}$ x .022	14—24	11.00
12 x $\frac{1}{2}$ x .025	14—24	12.00

Packed $\frac{1}{2}$ gross in a pasteboard box,

For Power Use



Fig. 5527. Power

Size, inches	Teeth, per inch	Price, per gross
12 x $\frac{5}{8}$ x .032	14	14.40
12 x $\frac{3}{4}$ x .032	14	15.00
12 x $\frac{3}{4}$ x .049	10	18.00
12 x 1 x .049	10	28.80
14 x $\frac{1}{2}$ x .030	14	15.00
14 x $\frac{3}{4}$ x .032	14	18.00
14 x $\frac{3}{4}$ x .049	10	21.60
14 x 1 x .049	10	31.20
17 x 1 x .049	10	36.00
17 x 1 x .065	10	39.00
24 x 1 x .049	10	50.40
24 x 1 x .065	10	54.00
Inch Gauge	.032	.049 .065
Packed in a pasteboard box, gross . . .	$\frac{1}{2}$	$\frac{1}{3}$ $\frac{1}{4}$

Hand Saws



Fig. 5530. No. 7 Rip



Fig. 5531. No. 7 Hand



Fig. 5532. No. 7 Panel

No. 8 Rip

Skewback, refined crucible steel blade, warranted. Apple handle, full polished. Brass screws.

30-inch, per dozen.....	28.50
28-inch, per dozen.....	25.50

No. 8 Hand

26-inch Hand

Per dozen.....	22.50
----------------	-------

No. 8 Panel

Inches.....	16	18	20	22	24
Per dozen.....	14.75	16.25	18.00	20.00	21.50

Made with hand or rip saw teeth at same price.

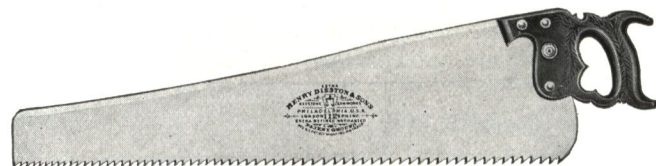


Fig. 5536. No. 112 Rip



Fig. 5538. No. 112 Hand

No. 7 Rip

Crucible steel, grained blade, warranted. Beech handle, full polished. Brass screws.

Inches.....	28	30	32	34	36
Per dozen..	23.50	27.00	30.50	34.50	39.00

No. 7 Hand

26-inch Hand

Per dozen	20.00
-----------------	-------

No. 7 Panel

Inches.....	14	16	18	20	22	24
Price per dozen....	12.00	13.00	14.00	16.00	18.00	19.00



Fig. 5533. No. 8 Rip



Fig. 5534. No. 8 Hand



Fig. 5535. No. 8 Panel



Fig. 5537. No. 112 Panel

Skewback, extra refined London spring steel, selected and highly polished blade, warranted. Apple handle, carved and polished. Brass screws.

30-inch Rip, per dozen.....	39.00				
28-inch Rip, per dozen.....	34.00				
26-inch Hand, per dozen.....	30.00				
Panel, inches.....	16	18	20	22	24
Per dozen.....	19.75	21.75	24.00	26.00	28.00

Plumbers' Torches

For Gasoline, Kerosene and Alcohol



Fig. 5540. No. 32 Torch



Fig. 5541. No. 31 Torch



Fig. 5542. No. 38 Torch

No. 32 Gasoline Torch

No. 32 has no equal where intense heat is desired, and has integral hook and support for holding soldering coppers. Burner is made of special generator metal, which retains the heat longer, producing an intensely hot blue flame that burns perfectly in hard wind or extreme cold. Automatic brass pump in tank, with automatic double spring check, supplies required air pressure.

No. 32 Capacity, 2 pints. Weight, $4\frac{1}{4}$ pounds, each..... 8.00

No. 31 Gasoline Torch

Exactly like No. 32 except without hook and support. Best plain quart torch on the market.

No. 31. Capacity, 2 pints. Weight, $4\frac{1}{4}$ pounds, each..... 7.60

No. 38 Gasoline Torch

Has improved burner of special generator metal, which produces a perfectly blue flame of intense heat, indoors or out. Hook and support for holding soldering coppers is a great convenience.

No. 38 Capacity, 1 pint. Weight, $2\frac{3}{4}$ pounds, each..... 7.20

No. 37 Gasoline Torch

Is exactly like No. 38 but without hook and support. Best pint torch made.

No. 37 Capacity, 1 pint. Weight, $2\frac{3}{4}$ pounds, each..... 6.80

No. 108 Gasoline Torch

No. 108 Quart Size Torch is light and well balanced. Tank is made of heavy seamless drawn brass, reinforced, with automatic brass pump with double springs, which forms the handle. Burner is fitted with wheel handle and made of bronze metal, producing a steady blue flame of intense heat, also fitted with solid hook and support, making it a torch of exceptional merit.

No. 108 Capacity, 1 quart. Weight, 4 pounds, each..... 6.80

No. 112 Gasoline Torch

Is a good torch for the price, and while not as good as others that have the patented automatic brass pump, it is equal to any torch having pump with single spring. Produces a steady flame of intense heat. Tank is made of heavy brass.

No. 112 Capacity, 2 pints. Weight, $4\frac{1}{4}$ pounds, each..... 6.40

No. 96 Kerosene Torch

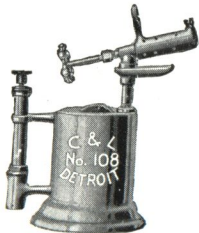
No. 96 Torch will be appreciated by all users of kerosene tools. Burner produces an intensely hot, clear, blue flame, about 6 inches in length, generating sufficient heat to quickly melt a $\frac{1}{4}$ -inch copper rod, and will be found excellent for brazing, or for outside use under severe conditions of wind and weather.

No. 96 Capacity, 2 pints. Weight, $3\frac{3}{4}$ pounds, each..... 8.80

No. 28 Alcohol Torch

No. 28 is the ideal torch for electricians' and jewelers' use or for any work requiring a pointed concentrated flame. Made of polished brass, nickel-plated. A large filler in the side makes the tank easy to fill. A small cap covers the wick when not in use.

No. 28 $1\frac{3}{4} \times 7\frac{1}{4}$ -inch size, each..... 2.00

Fig. 5543
No. 108 TorchFig. 5544
No. 112 TorchFig. 5545
No. 96 Kerosene TorchFig. 5546
No. 28 Alcohol Torch

Plumbers' Fire Pots for Gasoline and Kerosene

No. 1 Gasoline Fire Pot

The No. 1 Fire Pot is probably adapted to a greater variety of uses than any other fire pot made. Tank is of heavy gauge seamless drawn steel with bottom and fittings welded in, not soldered, making it strong and durable. Also has extra large filler plug and funnel. Burner is made of special generator metal, which holds the heat longer and works perfectly in windy or cold weather. Swiveled burner permits moving the flame up or down. Will easily heat a pair of 12-pound coppers and melt a pot of lead at the same time.

No. 1 Capacity, 7 pints. Shipping weight, 11 pounds, each..... 13.60

No. 5 Gasoline Fire Pot

The No. 5 Fire Pot is one size smaller than the No. 1, accommodating 8-pound coppers.

No. 5 Capacity, 5 pints. Shipping weight, 10½ pounds, each..... 10.40

No. 21 Gasoline Fire Pot

No. 21 Steel Fire Pot is the strongest coil fire pot made. Tank is made of heavy steel with bottom and fittings welded in. Heavy uprights support extra heavy top plate. Filler is large and funnel shaped with large filler plug. Shield is of drawn steel and all small fittings are brass. Air pressure is secured by automatic pump.

No. 21 Capacity, 8 pints. Shipping weight, 9¾ pounds, each..... 9.60

No. 11 Gasoline Fire Pot

No. 11 Fire Pot is exactly the same as No. 21, but is fitted with a rubber bulb.

No. 11 Capacity, 8 pints. Shipping weight, 10 pounds, each..... 8.80

No. 20 Coil Fire Pot

No. 20. One gallon capacity, fitted with automatic brass air pump, enabling the operator to use more air than with the bulb type, thereby producing a blue blast flame that is intensely hot. Tank is made of heavy galvanized iron, fitted with galvanized iron top plate and bottom ring. Coil is extra heavy pipe, the burner of steel, and all small or light castings are malleable iron or brass. The needle point valves are fitted with stuffing boxes, are always tight and give the operator perfect control of the fire.

No. 20 Capacity, 1 gallon. Shipping weight, 9¾ pounds, each..... 6.80

No. 10 Gasoline Fire Pot

No. 10, with tapered tank, is similar to No. 20, except that it is fitted with a rubber bulb for producing air pressure.

No. 10 Capacity, 8 pints. Shipping weight, 10 pounds, each..... 6.00

No. 221 Kerosene Fire Pot

No. 221 is remarkable in heat producing qualities. Burner is made with a powerful generator that superheats the kerosene before it is burned, securing a perfect combustion of the fuel. All parts are easily accessible for cleaning. Tank is made of heavy gauge steel with bottom and fittings welded in.

No. 221 Capacity, 8 pints. Shipping weight, 12 pounds, each..... 15.20

No. 222 Kerosene Fire Pot

Similar to No. 221, except that it is equipped with removable hood made of heavy gauge steel that will admit of two large size soldering coppers.

No. 222 Capacity, 8 pints. Shipping weight, 13 pounds, each..... 16.00



Fig. 5550
No. 1 Fire Pot



Fig. 5551
No. 21 Fire Pot



Fig. 5552
No. 20 Fire Pot

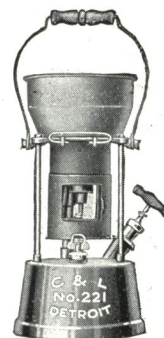
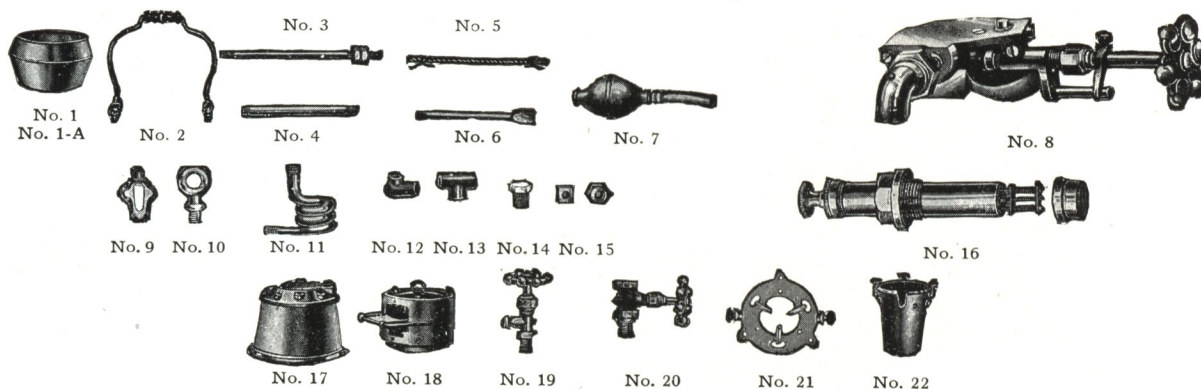


Fig. 5553
No. 221 Kerosene
Fire Pot

C & L Fire Pot Repairs



C & L Fire Pot Repairs

No. 1 Large Shield, each.....	.70	No. 12 Elbow, each.....	.10
No. 1-A Small Shield, each.....	.70	No. 13 Tee, each.....	.10
No. 2 Handle, each.....	.40	No. 14 Plug, each.....	.08
No. 3 Upright, each.....	.12	No. 15 Nuts, each.....	.04
No. 4 Connecting Pipe, each.....	.12	No. 16 Pump, each.....	1.28
No. 5 Wire for Coil, each.....	.08	No. 17 Reservoir, each.....	2.40
No. 6 Burner.....	.14	No. 18 No. 3 Shield, each.....	1.60
No. 7 Bulb, each.....	.48	No. 19 Air Valve, each.....	.40
No. 8 Burner and Swivel, each.....	4.00	No. 20 Valve, each.....	.60
No. 9 Handle Ear, each.....	.12	No. 21 Top Plate, each.....	.30
No. 10 Filler Plug, each.....	.40	No. 22 Coil Cup, each.....	.40
No. 11 Coil, each.....	.60		

In ordering, state the Number of Fire Pot for which repair is wanted.



Fig. 5560. Melting Stove

Portable Melting Stove

For lead or solder, Nos. 85 and 86 will heat soldering irons.

No. 87 and larger sizes for pots only.

Can be furnished in sizes up to 500 pounds capacity.

One cubic foot of gas will melt approximately 2 pounds of metal per hour.

Capacities and List Prices

No.....	85	86	87
Diameter, inches.....	8	9	16
Height, inches.....	13	13½	22
Capacity, pounds.....	25	50	100
Cubic Feet to Melt.....	18	30	50
List Price, each.....	7.50	9.50	32.00

Gas Soldering Furnaces

No. 1 Brick-lined Single Burner

Opening, 3 x 2½ inches

Length, 14 inches. Width, 6½ inches. Height, 7 inches.

No. 1, each..... 6.00

No. 2 Brick-lined Double Burner

Opening, 5 x 2¼ inches

Length, 14 inches. Width, 8 inches. Height, 7 inches.

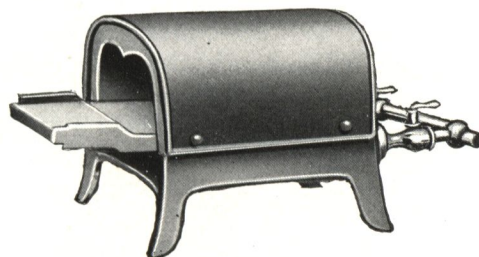
No. 2, each..... 7.00

No. 3 Brick-lined Double Burner

Opening, 5 x 3¾ inches

Length, 15 inches. Width, 9 inches. Height, 8½ inches

No. 3, each..... 9.00



No. 5561. Nos. 2 and 3

The fire brick keeps the heat within the furnace and prevents radiation. The proportion of gas consumed is about 8 per cent. to 92 per cent. of air. The center projection of the brick divides the heat so that it is kept around each soldering iron. The gas consumption of the double burner furnace is about 12 feet per hour. This can be reduced about one half after the irons have become hot. The burners can be readily and easily cleaned.

Climax Plugs

Sanitary Tee Plugs—Fig. 5570

Size.....	2	3	4	5	6
Each.....	3.50	4.50	6.00	7.50	9.00
Size.....	7	8	9	10	
Each.....	11.00	14.00	18.00	20.00	

Test Tee Plug—Fig. 5571

Size.....	2	3	4	5
Each.....	2.50	3.50	4.50	6.00
Size.....	6	8	10	
Each.....	7.50	11.00	14.00	

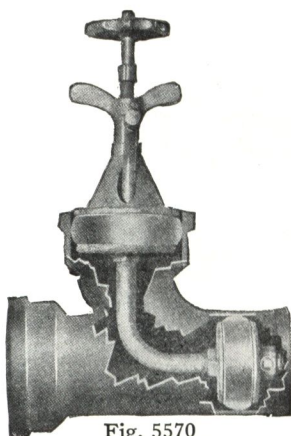


Fig. 5570
Sanitary Tee Plug

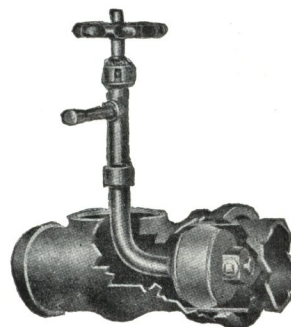


Fig. 5571
Test Tee Plug

Climax Y-Branch Double Plug

Fig. 5572, 3-inch and larger has water connection for filling stack. By turning hand wheel to right, rubber on lower plug is expanded. Upper plug rubber is expanded by turning wing nut. By revolving hand wheel to left, the water in stack is permitted to flow into sewer.

Size.....	2	3	4	5	6	7	8	10
Each.....	2.50	3.50	4.50	6.00	7.50	9.00	11.00	14.00

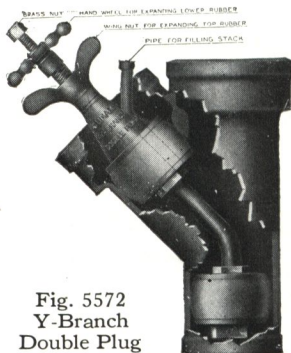


Fig. 5572
Y-Branch
Double Plug

Smoke Machine Test Plug—Fig. 5573

With 1-inch Pipe Connection for Admitting Smoke

Size.....	2	3	4	5	6
Each.....	1.50	2.00	2.50	3.50	4.50



Fig. 5573
Smoke Machine Test Plug



Fig. 5574
Wing Nut

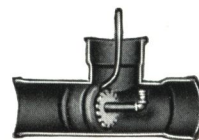


Fig. 5575
Ratchet Nut

Wing and Ratchet Nut Styles

Size.....	2	3	3½	4	5	5½	6	7	8	9	10
Fig. 5574-5575, each.....	1.00	1.25	1.50	1.50	2.00	2.40	2.50	3.50	4.50	6.25	8.00
Extra Rubbers, each.....	.25	.50	.70	.70	.90	1.10	1.20	2.00	3.25	4.60	5.90

Wrench for Fig. 5575 extra

Climax Double Testing Plug

Size....	2	3	4	5	6	8	10
Each...	2.50	3.50	4.50	6.00	7.50	11.00	14.00

Reducing Straight Double Plugs take price of the larger size plug.

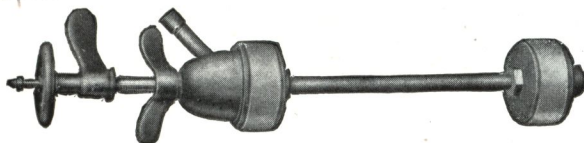


Fig. 5576. Double Testing Plug

High Pressure Plugs—Fig. 5577

High Pressure Cast Iron Water Pipe Plug, for use in the hub end. The rubber enters the bore, while the large ring Flange remains in the bell. Set screws engage recess in the bell, and aid in holding against the pressure. Plugs for gas and soil pipe are of a different pattern.

Size	Soil Pipe	Gas Pipe	Water Pipe	Rubbers
4	.....	.....	2.00	.60
6	.....	.....	3.50	.90
8	.....	.....	6.00	2.00
10	.....	.....	10.50	3.25
12	10.00	10.00	15.00	4.00
15	15.00	.....	.....	6.00
16	17.00	17.00	25.50	7.00
20	23.00	23.00	34.50	9.50
24	30.00	30.00	45.00	12.25
30	38.00	38.00	57.00	15.50

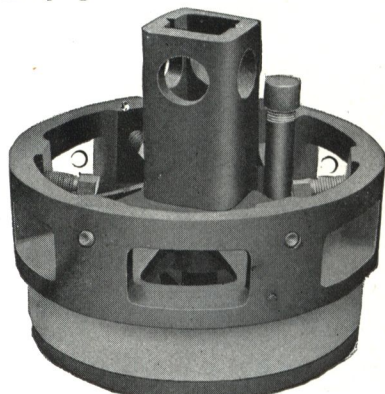


Fig. 5577. High Pressure Plug

Plumbers' Tools



Fig. 5580. Sand Plug



Fig. 5581. Sand Plug

Assorted shapes and sizes

Per dozen..... 3.60

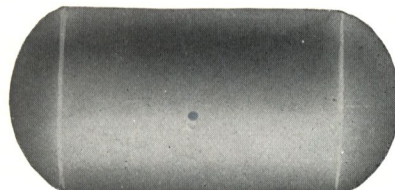


Fig. 5582. Drift Plug

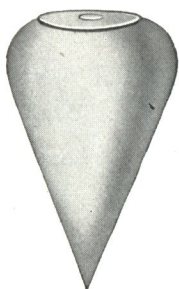
Boxwood Plugs, $\frac{1}{2}$, $\frac{3}{4}$, 1, $1\frac{1}{4}$, $1\frac{1}{2}$ and 2-inch
Per dozen..... 1.50Dogwood Plugs, $\frac{1}{2}$, $\frac{3}{4}$, 1, $1\frac{1}{4}$, $1\frac{1}{2}$ and 2-inch
Per dozen..... 1.20

Fig. 5583. Turn Pin

Boxwood, Nos. 1, 2, 3
Per dozen..... 2.50Dogwood, Nos. 1, 2, 3
Per dozen..... 1.30

Fig. 5584. Dresser

Boxwood, per dozen..... 10.00
Dogwood, per dozen..... 5.80

Fig. 5585. Bossing Stock

Boxwood, per dozen..... 8.10
Dogwood, per dozen..... 5.40

Fig. 5586. Oval Shave Hook

Per dozen..... 3.00



Fig. 5587. Half Oval Shave Hook

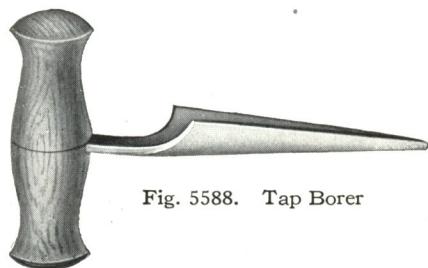
Per dozen..... 3.00
Triangular, per dozen..... 3.00
Square, per dozen..... 4.00

Fig. 5588. Tap Borer

Tap Borers

Fig. 5588

Per dozen..... 3.50

Fig. 5589

Per dozen..... 4.50

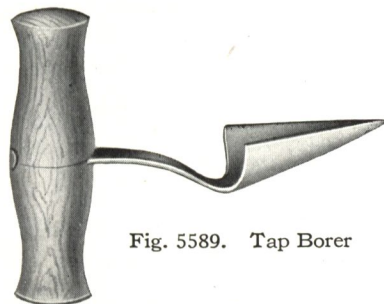


Fig. 5589. Tap Borer

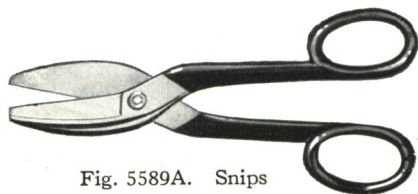


Fig. 5589A. Snips

No.	Cut, Inches	Each
7	4	2.50
8	$3\frac{1}{2}$	2.00
9	3	1.50
10	$2\frac{1}{2}$	1.40
9 Circular	3	2.50

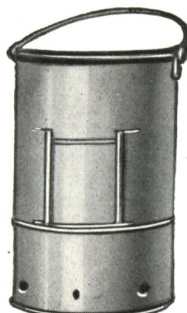


Fig. 5589B

Plumbers' Charcoal
Furnace, 9 x 14
inches.

Per dozen.. 18.00

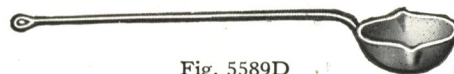


Fig. 5589D

Wrought Iron Ladles

Size.....	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	5
Each.....	.41	.48	.50	.58	.72
Size.....	6	7	8	9	10
Each.....	.84	3.02	3.75	5.00	6.05



Fig. 5589C

Solder Pot

Diam., ins..	4	5	6
Each.....	.36	.40	.55
Diam., ins..	7	8	9
Each.....	1.00	1.33	1.80
Diam., ins..	10	12	$13\frac{1}{2}$
Each.....	2.60	4.10	5.25

Plumbers' Tools



Fig. 5590. Torch

Torches

Tin Top Filler Torches	
Per dozen.....	7.00
Tin Top and Side Filler	
Per dozen.....	7.50
Brass Top Filler Torches	
Per dozen.....	18.00
Brass Top and Side Filler	
Per dozen.....	18.00



Fig. 5592. Soil Brush

Per dozen..... 1.30



Fig. 5592A. Duster

Per dozen..... 10.00

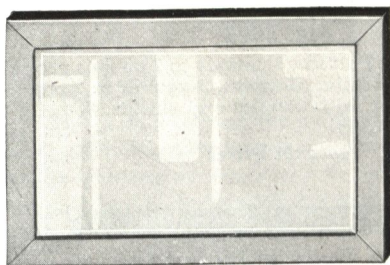


Fig. 5594. Looking Glass

Brass Back, per dozen..... 5.00
 Size, $3\frac{3}{4} \times 2\frac{1}{2}$ inches.

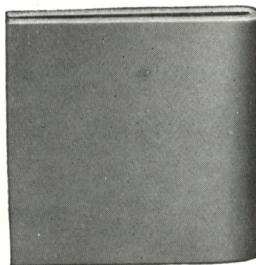


Fig. 5595. Wiping Cloth

Moleskin Wiping Cloths, in
 sets or otherwise.

Per dozen..... 2.00
 Ticking, per doz..... 1.20



Fig. 5591. Blow Pipe

Brass, Plain, 8, 9, 10, 12-inch.
 Per dozen..... 5.00
 Brass, Plain, with Bulb, 10-inch.
 Per dozen..... 8.00

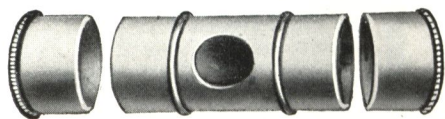


Fig. 5597.

Brass Grease, Rosin and Flour Boxes
 Medium, per dozen..... 20.00
 Large, per dozen..... 22.00



Fig. 5593. Pot Hook

Per dozen..... 1.50

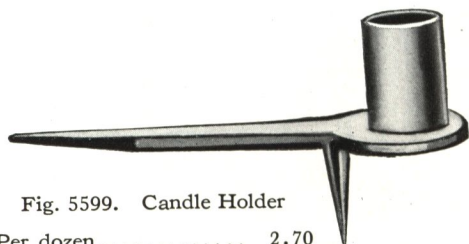


Fig. 5599. Candle Holder

Per dozen..... 2.70

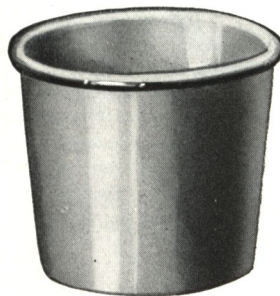


Fig. 5598

Polished Soil Cups

With Handle, per dozen..... 3.80
 Without Handle, per dozen..... 3.50

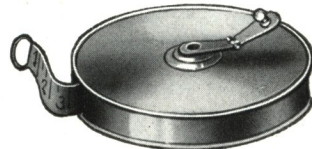


Fig. 5596

Measuring Tape

25-foot, per dozen.... 5.64
 50-foot, per dozen.... 7.50

Plumbers' Tools

Universal Bibb Seat Dresser—Fig. 5600

With four interchangeable Tool Steel Cutters. Well made and finely finished.

Price, each..... 1.70



Fig. 5600. Universal Bibb Reseater

Skinner Bibb Reseater—Fig. 5601

With this tool the operator removes the bonnet of the leaky faucet and inserts the reseater, fitted with proper cutter. The feed screw is then turned down until the cutter rests lightly on the bibb seat. Wheel is then turned steadily, forcing the cutter down slowly, with occasional slight twists of the feed screw. Equipped with three cutters for $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ and $\frac{3}{4}$ -inch bibbs.

Price, each..... 2.50

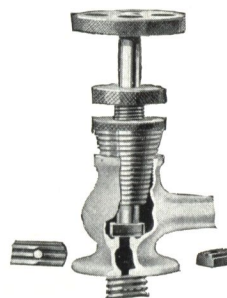


Fig. 5601. Skinner Bibb Reseater



Fig. 5602. Soldering Copper, Pointed Pattern

Pointed Pattern, 1 pound to 12 pounds per pair.
Flat Bottom Pattern, 2 pounds to 8 pounds per pair.
Riveted Handle Pattern, 2 pounds to 5 pounds per pair.

Market Prices

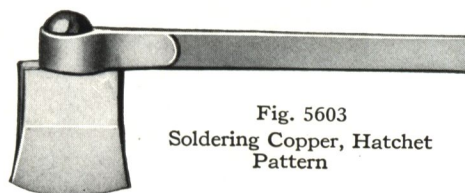


Fig. 5603
Soldering Copper, Hatchet Pattern

Fig. 5603

Swivel Hatchet Pattern, 3 pounds to 7 pounds per pair.
Rigid Handle Hatchet Coppers, 3 pounds to 7 pounds.
Roofing Pattern, with handles and shields, 8, 9, 10, 12 and 14 pounds per pair.

Market Prices



Fig. 5604. Plumbers' Tool Bag

No. 5, each.....	3.40
No. 3 Full Leather Bound, each.....	4.50
No. 7 Half Leather Bound, each.....	5.00

Improved Gas Fitters' Proving Pump and Mercury Column with Ether Cup

90 Pump, with Tubing and Mercury Column, complete, each...	12.50
92 Pump, with Tubing and Spring Testing Gauge, complete, each.	14.00
93 Pump, Tubing with New Mercury Column, 10 inches long, ea.	13.00
93½ Pump, Tubing with New Mercury Column, 22 inches long, ea.	13.50
94 Pump, with Tubing, each.....	6.50
95 Pump only, each.....	6.00
96 Mercury Column, with Ether Cup, each.....	6.00
96A Mercury Cup, only, each.....	.70
96B Guard, for Glass, each.....	2.00
96C Glass, only, each .50; per dozen.....	5.00
96D Coupling, each, .44; per dozen.....	4.50
97 Mercury Column, New Pattern, 10 inches long, each.....	6.50
97½ Mercury Column, New Pattern, 22 inches long, each.....	7.00
98 Spring Testing Gauge, with Ether Cup and Valve, each.....	7.50
98A Valve Body, with Ether Cup, each.....	3.30
98B Spring Gauge, with Cover, each.....	4.20
98C Pressure Tubing, per foot.....	.17



Fig. 5605. Lead Pipe Bending Springs

Sizes, $\frac{3}{4}$, 1, 1¼, 1½, 2

All sizes, per dozen..... 7.00

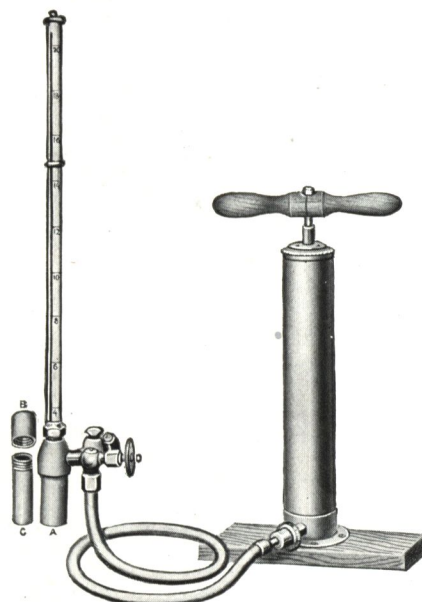


Fig. 5606. Gas Fitters' Proving Pump

Washer Cutters

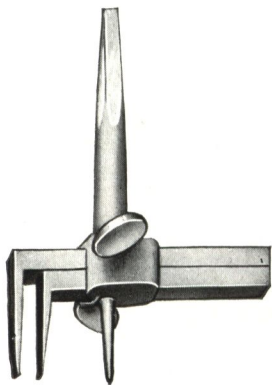


Fig. 5610. Washer Cutter

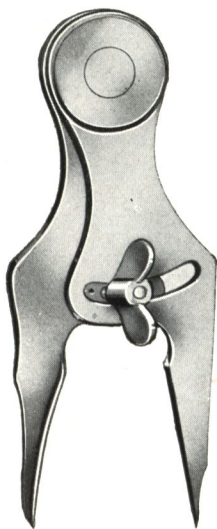


Fig. 5612. Washer Cutter

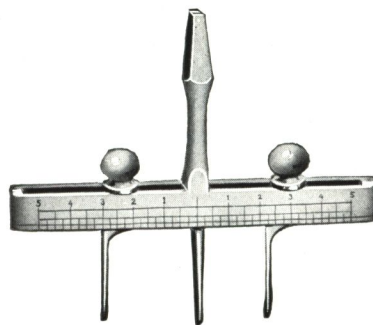


Fig. 5613. Registering Washer Cutter

Per dozen.....	9.00	Per dozen.....	17.40	Per dozen.....	20.00
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Wrigley Pipe-cleaning Augers

This is an ideal machine for cleaning and removing stoppages from all waste or drain pipes. Made in six sizes. They make unnecessary the tearing up of floors, walls, lawns, etc., in order to remove an obstruction in a sewer or drain pipe. By simply inserting the auger wire in the pipe and turning the handle of the machine, the obstruction is easily and quickly removed, and at no expense except the initial cost of the machine.

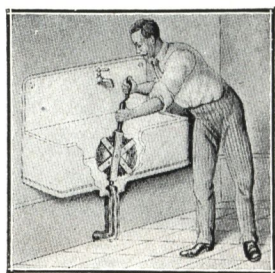


Fig. 5614. No. 0

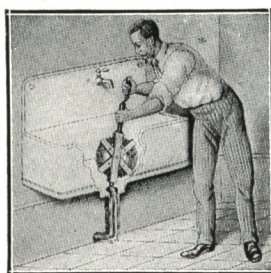


Fig. 5615. No. 1

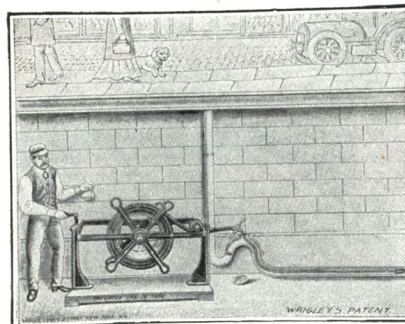


Fig. 5616. Nos. 2 and 3

This machine is constructed especially for removing obstructions from closet bowls, etc. Many thousands of these machines are in daily use in hotels, apartment houses, stores, comfort stations, etc. Extremely simple and requires no skill to operate it.

Price List

To reach 3 feet, each.....	4.75
To reach 6 feet, each.....	5.50
To reach 9 feet, each.....	6.25

This machine is made in one size only, and is designed for small drains leading from sink, wash bowl and bath tub. It is a necessity in all hotels, institutions, restaurant kitchens, residences, etc.

Price List

No. 1 To reach 9 feet, each...	6.00
--------------------------------	------

No. 2 reaches 25 feet and works on a reel with crank handle arrangement and carries 25 feet of auger wire. It is used for removing obstructions and clearing the corrosion from all secondary sewer pipes of buildings, such as sink drains, etc.

No. 3 reaches 50 feet and is used for clearing stoppages in the primary or main sewer pipe of buildings and carries 50 feet of auger wire wound on a reel.

Price List

No. 2 To reach 25 feet, each..	20.00
No. 3 To reach 50 feet, each..	50.00

Plumbers' Tools



Fig. 5620. Steel Bending Pin

No. 1, Bent two ends.

No. 2, Bent one end.

No. 4, Straight, one end pointed.

Medium Weight, per dozen..... 2.90



Fig. 5622. Stub Calking Chisel

Per dozen..... 3.30



Fig. 5624. Regular Calking Chisel

Per dozen..... 3.30



Fig. 5626. Yarning Chisel

Per dozen..... 3.30



Fig. 5628. Steel Wood Chisels

Per dozen..... 4.10

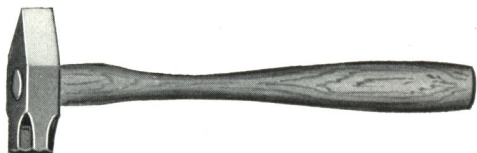


Fig. 5629A. Plumbers' Hammer

Small, per dozen..... 13.00

Large, per dozen..... 14.00



Fig. 5629C. Chipping Knife

4½-inch Blades, per dozen..... 5.50

5-inch Blades, per dozen..... 6.00

6-inch Blades, per dozen..... 6.50



Fig. 5629E. Plain Compasses

Length, inches.....	6	7	8
Per dozen.....	4.25	5.05	5.85

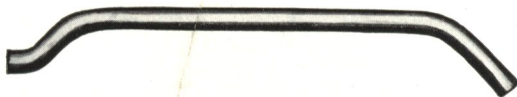


Fig. 5621. Kinking Iron

Round Steel Kinking Iron, per dozen..... 4.00



Fig. 5623. Right Hand Calking Chisel

Per dozen..... 3.30



Fig. 5625. Left Hand Calking Chisel

Per dozen..... 3.30



Fig. 5627. Calking Chisel for Corners

Per dozen..... 4.30



Fig. 5629. Firmer Chisel

With Extra Heavy Tangs and Blades

½ and ¾-inch, per dozen..... 4.50

1-inch, per dozen..... 6.00

1¼-inch, per dozen..... 7.00



Fig. 5629B. Buzzell's Patent Basin Wrench

Per dozen..... 14.00



Fig. 5629D. Wing Dividers

Length, inches.....	6	8
Per dozen.....	5.85	8.00

Steel Tool Chests

Made from $\frac{1}{16}$ -inch cold rolled sheet steel with malleable iron corner pieces and hardwood braces, and fitted with heavy wrought iron hinges and hasp, with cover so arranged as to be held open by support from the back of chest. Each chest is furnished with a first-class brass lock and two keys, and bolts to screw down cover at front corners. They are lighter and cheaper than any first-class make of wood chest, and will outwear several wood chests. They are painted, well proportioned and ornamental in design, and make a first-class chest for steam fitters, gas fitters, plumbers and other trades where a light and strong tool chest is required. They are made in eleven styles and five sizes of each style.

No. 3 chests and larger sizes have handles on four sides.



Fig. 5630
Style A, with One Drawer

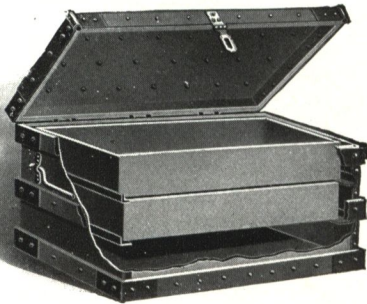


Fig. 5631
Style B, with Two Trays



Fig. 5632
Style C without Drawers

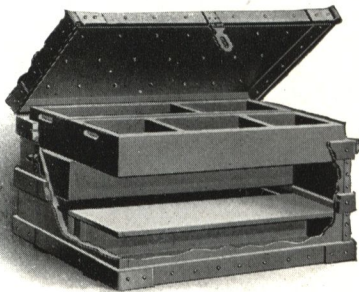


Fig. 5633. Style D

Style A Steel Tool Chest

No.	1	2	3	4	5
Depth, inches	11	14	16	19	20
Width, inches	12	15	17	20	22
Length, inches	24	30	36	42	48
*Weight, pounds	62	88	107	145	165
One Drawer, each	18.50	25.00	28.00	32.00	36.00
Two Drawers, each	21.00	27.00	29.50	33.00	38.50

Style A chests are always sent with one drawer unless ordered with two.

*Weight of one-drawer chests. Two-drawer chests are slightly heavier.

Style B Steel Tool Chests

No.	1	2	3	4	5
Depth, inches	11	14	16	19	20
Width, inches	12	15	17	20	22
Length, inches	24	30	36	42	48
*Weight, pounds	65	99	127	174	191
One Drawer, each	19.50	27.00	30.00	33.50	37.50
Two Drawers, each	20.00	28.00	30.50	35.00	39.00

Style B chests are always sent with two trays unless ordered with one.

*Weight of two-tray chests.

Style C Steel Tool Chests

No.	Depth Inches	Width Inches	Length Inches	Weight Pounds	Each, Without Drawers	Each, With 2 Drawers
0	11	12	24	55	15.75	.....
1	11	12	30	65	18.50	21.00
2	11	12	36	75	22.00	26.50
3	11	12	42	94	25.00	30.00
4	11	12	48	106	29.00	34.00
5	11	12	54	116	33.50	39.00
6	11	12	60	126	36.00	43.00
7	11	12	66	136	39.00	46.00
8	11	12	72	139	43.00	50.00

Style D Steel Tool Chests

No.	Depth Inches	Width Inches	Length Inches	Weight Pounds	Each
1	11	12	24	72	23.00
2	14	15	30	105	31.00
3	16	17	36	137	34.00
4	19	20	42	183	38.00
5	20	22	48	208	42.00

These chests can be furnished in various other styles and sizes.

D Handle and Long Handle Scoops

Fig. 5640. Regular
D HandleFig. 5641. Long Bill
D HandleFig. 5642. Long Handle
Regular

Fig. 5640. Regular

No.....	2	3	4	5	6	7	8
Per dozen.....	26.40	27.10	27.80	28.50	29.20	30.30	31.40

Fig. 5641. Long Bill

No.....	5	6	7
Black, per dozen.....	25.30	26.00	26.90

Fig. 5642. Long Handle—Regular

No. 4, per dozen.....	27.80
No. 5, per dozen.....	28.50

Fig. 5643. Furnace
D Handle

Per dozen.....	18.00
----------------	-------

Fig. 5644. Long Handle—Furnace

Per dozen.....	18.00
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Fig. 5643
FurnaceFig. 5644
Long Handle
Furnace

Vehicle Washers

"Perfection"

Made of best material obtainable and carefully assembled and tested. Simple in construction, of neat appearance, sturdy and durable.

No. 1 Machine is recommended for small or private wash racks. The arm makes a 9-foot circle.

No. 2 is used in large rooms where large vehicles are washed. The arm makes a 12-foot circle.

No. 1	4½-foot Arm, each	12.00
No. 2	6-foot Arm, each	14.00

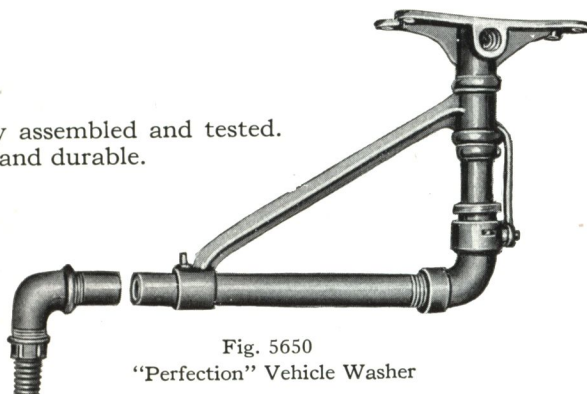


Fig. 5650
"Perfection" Vehicle Washer

"Perfect" Overhead Vehicle Washers

Style No. 1

Pipe and fittings galvanized iron, crossheads, four arm, Georgia pine, varnish finish. Elliptical track, 7 feet diameter, of 1¼ x ¼-inch iron. Roller of wood. Brass revolving joint with large stuffing box. Finish, black japan.

Price, each	20.00
Price with Shut-off in Hose Arm, each	25.00

Style No. 2

Same general construction as No. 1, except the roller, which is ball bearing, rubber covered. Finish, filled and bronzed.

Price, each	25.00
Price, with Shut-off in Hose Arm, each	30.00

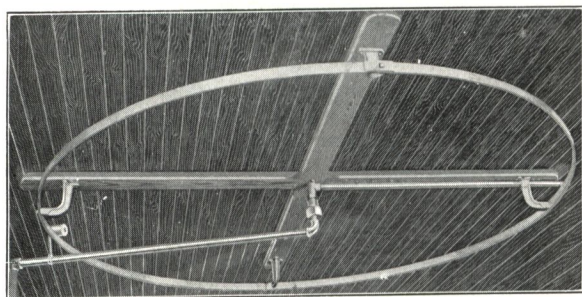


Fig. 5651 "Perfect" Washer, Nos. 1 and 2

No. 3 "Perfect" Washer

Noted for its substantial construction. Crosshead, six-arm of cypress, beveled edges, rounded corners, filled and varnished. Pipe and fittings are galvanized iron with a filled and bronzed finish. Track 1¼-inch angle iron, 7 feet in diameter, slightly elliptical. Revolving joint has an extra large body, with a 6-inch flange. Revolving section is 1½-inch diameter and the packing box extra large. Roller is ball bearing, rubber covered.

Price, each	40.00
Price with Shut-off in Hose Arm, each	45.00

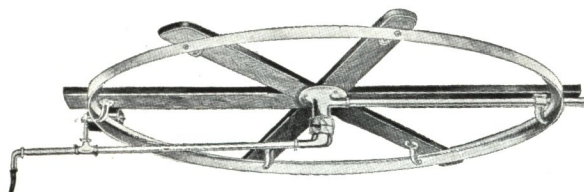


Fig. 5652. "Perfect" No. 3

Style No. 4 Double "Perfect"

Same general construction as No. 3, but is provided with a double revolving joint and two hose arms, so that two men can operate at the same time. A shut-off is also provided in one arm, so that one man may operate if desired. Adapted for large stables and garages where many vehicles must be cleaned.

Price	60.00
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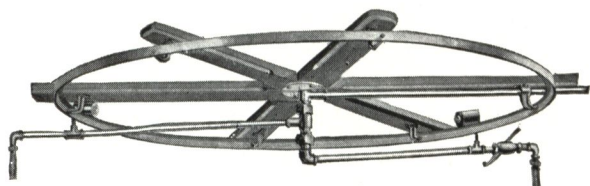


Fig. 5653. Double "Perfect" No. 4

"Perfect" No. 5

Finished brass, nickel-plated. Crosshead, six-arm, beveled edges, rounded corners, all highly finished. Elliptical track, 7 feet diameter, 1¼ x ¼-inch finished brass, nickel-plated. Revolving joint, improved model, finished brass, nickel-plated. Roller, ball bearing, rubber covered. Pipe and fittings, finished brass, nickel-plated.

Price, each	90.00
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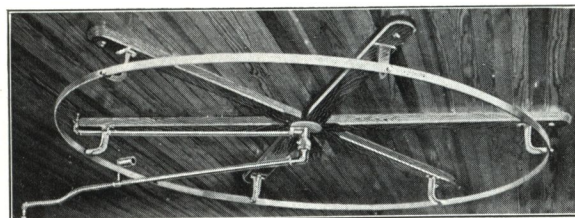


Fig. 5654. "Perfect" No. 5

Stable Cess-pool, Heavy Double Grate

12 x 12-inch, Depth 10-inch, Outlet 4-inch, each.....	3.75
16 x 16-inch, Depth 10-inch, Outlet 4-inch, each.....	4.50
16 x 16-inch, Depth 10-inch, Outlet 5-inch, each.....	5.00
12 x 12-inch, Depth 10-inch, Outlet 4-inch and 8 inch long, each.....	4.75
12 x 12-inch, Depth 10-inch, Outlet 4-inch and 12 inch long, each.....	5.75
16 x 16-inch, Depth 10-inch, Outlet 4-inch and 8 inch long, each.....	5.50
16 x 16-inch, Depth 10-inch, Outlet 4-inch and 12 inch long, each.....	6.25
16 x 16-inch, Depth 10-inch, Outlet 5-inch and 8 inch long, each.....	6.00
16 x 16-inch, Depth 10-inch, Outlet 5-inch and 12 inch long, each.....	7.00

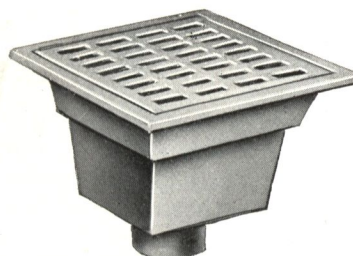


Fig. 5660. Stable Cess-pool



Fig. 5661

Watering Trough, with Safety Overflow
and Plug StrainerWater Troughs and
Harness Sinks

Fig. 5662

Half Circle Water Trough

With Patent Overflow and Plug Strainer
33 x 14 x 12 inches deep, each..... 20.00
Complete with Legs, each..... 24.00

Watering Trough with Back—Fig. 5661

No. 2	30 x 18 x 12 inches deep, each.....	24.00
No. 3	36 x 18 x 12 inches deep, each.....	28.00
No. 4	42 x 18 x 12 inches deep, each.....	32.00
No. 5	48 x 18 x 12 inches deep, each.....	36.00

Without Back—Fig. 5661

No. 2X	30 x 18 x 12 inches deep, each.....	20.50
No. 3X	36 x 18 x 12 inches deep, each.....	24.00
No. 4X	42 x 18 x 12 inches deep, each.....	27.50
No. 5X	48 x 18 x 12 inches deep, each.....	31.00

[If wanted without legs deduct 2.00 from list.]

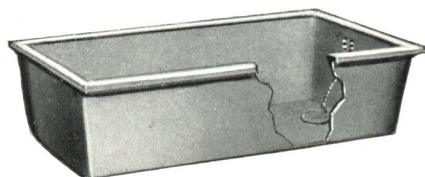


Fig. 5663

Water Trough, with Safety Overflow
and Plug Strainer

Water Trough—Fig. 5663

No. 6	14 x 20 x 12 inches deep, each.....	10.00
No. 7	16 x 20 x 12 inches deep, each.....	12.00
No. 8	20 x 24 x 12 inches deep, each.....	15.00
No. 9	20 x 30 x 12 inches deep, each.....	18.00
No. 10	20 x 36 x 12 inches deep, each.....	21.00
No. 11	20 x 42 x 12 inches deep, each.....	24.00
No. 12	20 x 48 x 12 inches deep, each.....	27.00
No. 12A	20 x 54 x 12 inches deep, each.....	32.00
No. 12B	20 x 60 x 12 inches deep, each.....	38.00

If wanted with legs as shown in Fig. 5661, add to list..... 4.00

Water Trough

Fig. 5664

No. 15	22 x 18 x 12 inches deep, each.....	16.00
No. 16	With Plain Splash Back, each....	20.00

Harness Washing Sink

Fig. 5665

No. 1	36 inches long, 26 inches wide, 28 inches high, each.....	27.00
No. 2	48 inches long, 30 inches wide, 28 inches high, each.....	40.00
	Without Back, deduct.....	2.50



Fig. 5664

Water Trough, with Legs
and Patent Overflow
and Plug Strainer

Fig. 5665

Harness Washing Sink, with Safety
Overflow and Plug Strainer

Stable Gutter and Cess-pools



Fig. 5670. Stable Gutter and Cover

Graded Stable Gutter and Cover Made in 5-foot lengths

For wood floor, width over flange, 6 inches. For cement floor, width over flange, $5\frac{1}{2}$ inches.

Gutter and Cover, any length up to 20 feet, per foot.....	1.60
Gutter only, any length up to 20 feet, per foot.....	1.04
Gutter and Cover, any length up to 40 feet, per foot.....	1.90
Gutter only, any length up to 40 feet, per foot.....	1.34
Cover only.....	.56

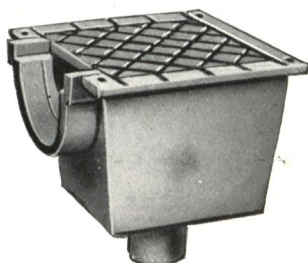


Fig. 5671. Open One End

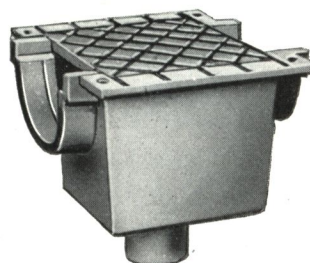


Fig. 5672. Open Both Ends

Graded Gutter Cess-pools

Graded Gutter Cess-pools—11-inch Square Top

Fig. 5671 or Fig. 5672 to receive Gutter up to 20 feet, each.....	7.00
Fig. 5671 or Fig. 5672 to receive Gutter up to 40 feet, each.....	8.00

Stable Gutter and Cover For Concrete Floor

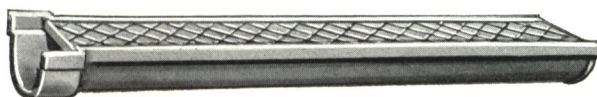


Fig. 5673

Gutter and Cover, in 4-foot lengths, width $5\frac{1}{2}$ inches, per foot.....	1.20
Gutter only, per foot.....	.64
Cover only, per foot.....	.56

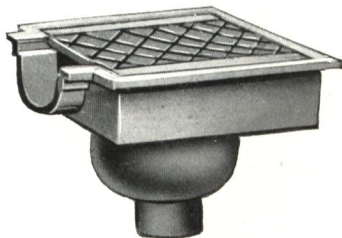


Fig. 5674. Stable Cess-pool, Open One End

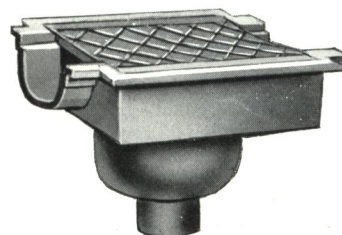


Fig. 5675. Stable Cess-pool, Open Both Ends

Stable Cess-pools

Fig. 5674 or Fig. 5675. Top 12 inches square; Outlet 3 inches, each.....	5.50
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Stable Gutter Angle Connections



Fig. 5676. Double Right Angle Connection

Each..... 7.00

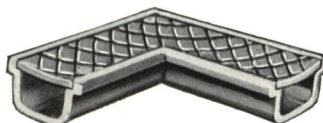


Fig. 5677. Right or Left Angle Connection

Each..... 5.00

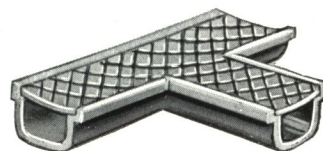


Fig. 5678. Right or Left Tee Angle Connection

Each..... 6.00

Frames, Covers and Grates



Fig. 5680. Flush Coal Hole, Frame and Cover

No. 1	15-inch Opening, Ring and Cover.....	4.50
No. 6	18-inch Opening, Ring and Cover.....	5.00
No. 2	20-inch Opening, Ring and Cover.....	5.50
No. 7	24-inch Opening, Ring and Cover.....	7.00



Fig. 5681. Waterproof Coal Hole, Frame and Cover

No. 3	15-inch Opening, Ring and Cover.....	4.50
No. 8	18-inch Opening, Ring and Cover.....	5.00
No. 4	20-inch Opening, Ring and Cover.....	5.50
No. 9	24-inch Opening, Ring and Cover.....	7.00



Fig. 5682. Catch Basin Grate for Gutters

Diameter of Grating, 26 inches

Price, each..... 26.00



Fig. 5683. Manhole Grate for Sewers

26 inches Diameter on Top.

Price, each..... 28.00

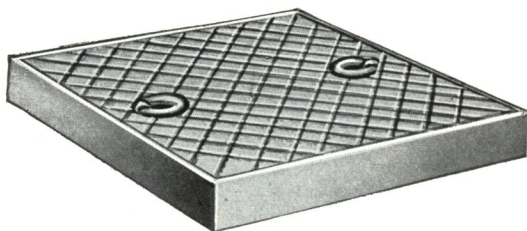


Fig. 5684. Manhole Frame and Cover

Manhole Frame and Cover

No. 1	12 x 12 x 3 inches deep, each.....	4.00
No. 2	18 x 18 x 3 inches deep, each.....	8.00
No. 3	20 x 20 x 3 inches deep, each.....	10.00
No. 4	20 x 24 x 3 inches deep, each.....	13.00
No. 5	24 x 24 x 3 inches deep, each.....	15.00
No. 6	26 x 26 x 3 inches deep, each.....	20.00
No. 7	26 x 32 x 3 inches deep, each.....	24.00

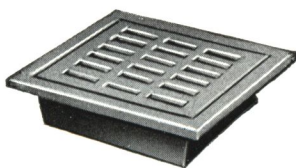


Fig. 5685. Frame and Grating

No. 1	12 x 12 Frame; Grating, 9½ x 9½, each...	3.00
No. 2	16 x 16 Frame; Grating, 13½ x 13½, each...	4.00



Fig. 5686. Vault Cover and Frame

No.	Frame	Cover	Each
1	15½ x 15½	12 x 12	4.00
2	17½ x 17½	14 x 14	5.00
3	19½ x 19½	16 x 16	6.00
4	21½ x 21½	18 x 18	8.00
5	23½ x 23½	20 x 20	10.00
6	28¾ x 28¾	24 x 24	14.00
7	23¾ x 28¾	20 x 24	12.00

Manholes and Catch Basins

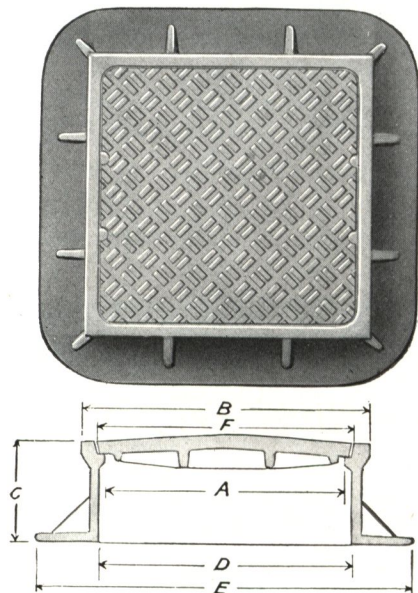


Fig. 5690. Manhole

Square Base, Square Opening. Cover, solid or perforated, with or without lettering. No charge for lettering.

Fig. 5690. Manhole

Size A Ins.	Weight Lbs.	List Price	Inches				
			B	C	D	E	F
24	975	97.50	28	10	26	36	26
27	1150	115.00	31	10	29	39	29
30	1250	125.00	39	10	32	42	32

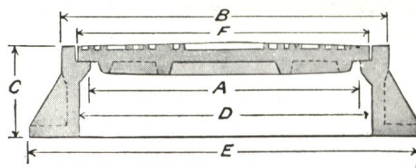
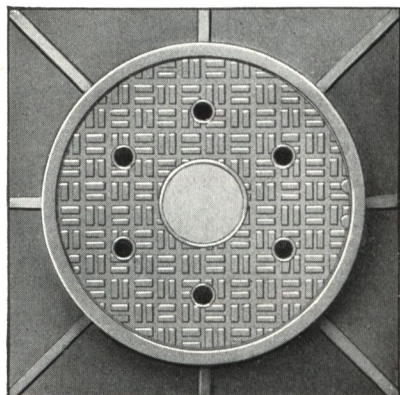


Fig. 5692. Manhole
Square Base, Round Opening



Type A
Flat

Type B
Curved

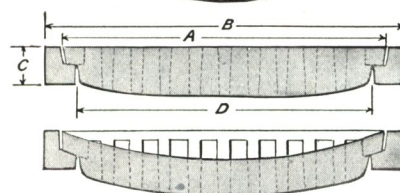


Fig. 5691. Catch Basin

Round Frame, Round Cover.
Type A—Flat Top.
Type B—Curved Top.

Fig. 5691. Catch Basin

Size A, inches.....	9	12	15	18	21
Weight, pounds.....	80	110	135	160	190
List Price.....	8.00	11.00	13.50	16.00	19.00
B, inches.....	11	14	17	21	24
C, inches.....	2	2	2	2½	2½
D, inches.....	7	10	13	16	19

Size A, inches.....	24	27	30	33	36
Weight, pounds.....	220	250	280	310	350
List Price.....	22.00	25.00	28.00	31.00	35.00
B, inches.....	27	30	34	37	40
C, inches.....	2½	3	3	3	3½
D, inches.....	22	25	28	31	34

Furnished with Standard Gratings.

Square Base, Round Opening Manhole

Fig. 5692

Cover solid or perforated, as indicated, and any lettering furnished without extra charge.

Dimensions—Price List

Size A Inches	Weight Pounds	List Price	Inches				
			B	C	D	E	F
24	700	70.00	30	9	26	36	26
27	850	85.00	33	9	29	39	29
30	1000	100.00	36	9	32	42	32

Catch Basins and Service Pots

Catch Basin
Square Frame, Square Cover

Type A, Flat Top

Type B, Curved Top

Furnished with Standard Gratings

Dimensions—Price List

Size A, inches.....	9	12	15	18	21
B, inches.....	11	14	17	21	24
C, inches.....	2	2	2	2½	2½
D, inches.....	7	9	13	16	19
Weight, pounds.....	90	120	150	180	210
List Price.....	9.00	12.00	15.00	18.00	21.00

Size A, inches.....	24	27	30	33	36
B, inches.....	27	30	34	37	40
C, inches.....	2½	3	3	3	3½
D, inches.....	22	25	28	31	34
Weight, pounds.....	240	270	300	330	370
List Price.....	24.00	27.00	30.00	33.00	37.00

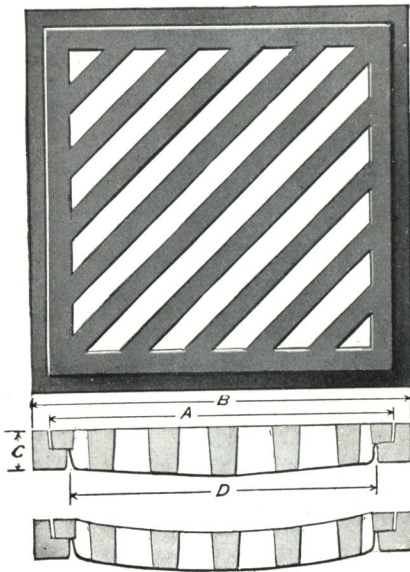


Fig. 5700. Catch Basin

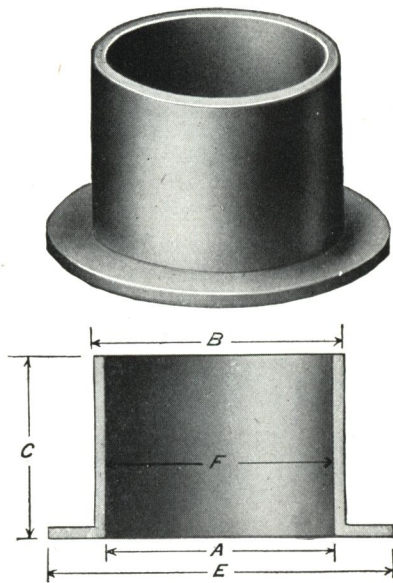
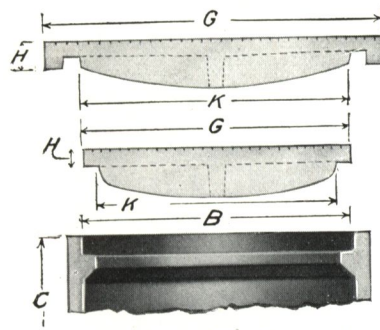
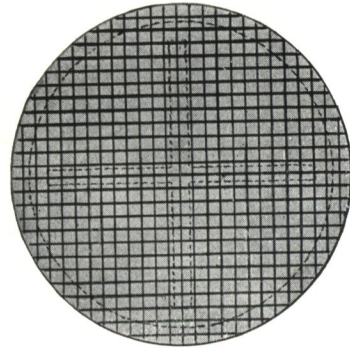


Fig. 5701. Service Pot

Dimensions—Price List

Size A Inches	Weight Pounds	Price List	Inches			
			B	C	E	F
15	320	32.00	16½	12	24	15
18	360	36.00	19½	12	26	18
20	400	40.00	21½	15	28	20
22	450	45.00	23½	15	30	22
24	650	65.00	25½	15	32	24

Larger size Manholes than listed above can be furnished to order and will be quoted on specifications.



Standard types of Service Pot Covers furnished with Fig. 5701 Service Pot Castings.

Dimensions

Outside Cover, Inches			Inside Cover, Inches		
G	H	K	G	H	K
19	1⅜	13½	15	1	13
22	1⅜	16½	18	1	16
24	1⅜	18½	20	1	18
26	1⅜	20½	22	1	20
28	1⅜	22½	24	1	22

Galvanized House Leaders

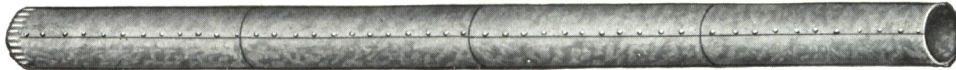


Fig. 5710

Galvanized, Riveted and Soldered Seam House Leader. Made of steel and genuine iron in 10-foot lengths. Also adapted for ventilating, air and blower pipe, etc.

Size, inches.....	1½	2	2½	3	3½	4	4½	5	6
No. 28 Gauge, per foot.....	.11	.13	.14	.15	.18	.20	.25	.25	.30
No. 26 Gauge, per foot.....	...	...	.20	.21	.24	.26	.31	.31	.36
No. 24 Gauge, per foot.....	...	...	...	.27	.30	.32	.37	.37	.42
No. 22 Gauge, per foot.....	...	...	...	.50	.55	.60	.65	.65	.75
No. 20 Gauge, per foot.....	...	...	...	.60	.65	.70	.75	.75	.85



Fig. 5712

Plain Galvanized Round Pipe. Made of steel and genuine iron in 10-foot lengths, without cross seams. Also suitable for air and ventilating pipe.

Size, inches.....	1½	2	2½	3	3½	4	5	6
No. 30 Gauge, per foot.....	.10½	.12½	.13½	.14½	.17	.19	.24	.29
No. 29 Gauge, per foot.....	.11	.13	.14	.15	.18	.20	.25	.30
No. 28 Gauge, per foot.....	.13	.15	.16	.17	.20	.23	.28	.33
No. 27 Gauge, per foot.....	...	.17	.18	.19	.22	.25	.31	.37
No. 26 Gauge, per foot.....	...	.19	.20	.21	.24	.28	.34	.40
No. 24 Gauge, per foot.....	...	...	...	.27	.31	.35	.44	.52

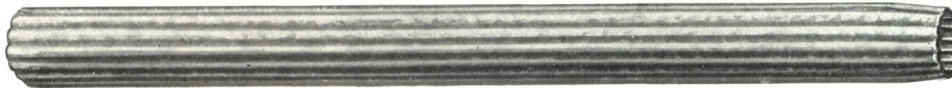


Fig. 5713. Round Corrugated

Size, inches.....	2	3	4	5	6
No. 30 Gauge, per foot.....	.12½	.14½	.19	.24	.29
No. 29 Gauge, per foot.....	.13	.15	.20	.25	.30
No. 28 Gauge, per foot.....	.15	.17	.23	.28	.33
No. 27 Gauge, per foot.....	.17	.19	.25	.31	.37
No. 26 Gauge, per foot.....	.19	.21	.28	.34	.40
No. 24 Gauge, per foot.....	...	.27	.35	.44	.52



Fig. 5714. Plain Square, Galvanized

Made in 7, 8 and 10-foot lengths, without cross seams, or any size or length required.

Size, inches.....	2 x 3	2 x 4	2½ x 4	3 x 4	3½ x 5	4 x 5	4 x 6
No. 28 Gauge, per foot.....	.25	.30	.32	.35	.42	.45	.50
No. 26 Gauge, per foot.....	.31	.36	.38	.41	.48	.51	.56
No. 24 Gauge, per foot.....	.49	.54	.56	.59	.66	.69	.74
No. 22 Gauge, per foot.....	.55	.60	.62	.65	.72	.75	.80
No. 20 Gauge, per foot.....	.65	.70	.72	.75	.82	.85	.90



Fig. 5715. Square, Corrugated

Made in 10-foot lengths, without cross seams. Galvanized.

Size, inches.....	2¼ x 1¾	3¼ x 2¾	4¼ x 2¾	5 x 3¾
No. 30 Gauge, per foot.....	.14½	.16½	.21	.26
No. 29 Gauge, per foot.....	.15	.17	.22	.27
No. 28 Gauge, per foot.....	.17	.19	.25	.30
No. 27 Gauge, per foot.....	.19	.21	.27	.33
No. 26 Gauge, per foot.....	.21	.23	.30	.36
No. 24 Gauge, per foot.....	...	.29	.37	.46

Galvanized Eave Trough

Steel and Genuine Iron

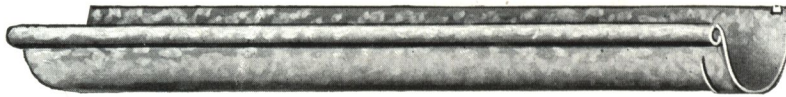


Fig. 5720. Eave Trough

Single Bead—Lap Joint

Size, inches.....	3	3½	4	4½	5	6	7	8	9	10
Galv'd Sheet Gauge No. 30, per foot.....	.12½	.13½	.15½	.17½	.18½	.22	.26	.30	.35	.39
Galv'd Sheet Gauge No. 29, per foot.....	.13	.14	.16	.18	.19	.23	.27	.31	.36	.40
Galv'd Sheet Gauge No. 28, per foot.....	.15	.16	.18	.20	.21	.25	.30	.34	.38	.42
Galv'd Sheet Gauge No. 27, per foot.....	.17	.18	.20	.22	.23	.28	.32	.37	.42	.46
Galv'd Sheet Gauge No. 26, per foot.....	.19	.20	.22	.24	.25	.30	.35	.40	.45	.50
Galv'd Sheet Gauge No. 24, per foot.....	...	...	.28	.30	.31	.37	.44	.50	.56	.62

Double Bead—Lap Joint

Size, inches.....	3	3½	4	4½	5	6	7	8	9	10
Galv'd Sheet Gauge No. 30, per foot.....	.15½	.16½	.18½	.20½	.21½	.25	.29	.33	.38	.42
Galv'd Sheet Gauge No. 29, per foot.....	.16	.17	.19	.21	.22	.26	.30	.34	.39	.43
Galv'd Sheet Gauge No. 28, per foot.....	.18	.19	.21	.23	.24	.28	.33	.37	.41	.45
Galv'd Sheet Gauge No. 27, per foot.....	.20	.21	.23	.25	.26	.31	.35	.40	.45	.49
Galv'd Sheet Gauge No. 26, per foot.....	.22	.23	.25	.27	.28	.33	.38	.43	.48	.53
Galv'd Sheet Gauge No. 24, per foot.....	...	...	.31	.33	.34	.40	.47	.53	.59	.65

Single Bead—Slip Joint

Size, inches.....	3	3½	4	4½	5	6	7	8	9	10
Galv'd Sheet Gauge No. 30, per foot.....	.13½	.14½	.16½	.18½	.19½	.24	.28	.32	.37	.41
Galv'd Sheet Gauge No. 29, per foot.....	.14	.15	.17	.19	.20	.25	.29	.33	.38	.42
Galv'd Sheet Gauge No. 28, per foot.....	.16	.17	.19	.21	.22	.27	.32	.36	.40	.44
Galv'd Sheet Gauge No. 27, per foot.....	.18	.19	.21	.23	.24	.30	.34	.39	.44	.48
Galv'd Sheet Gauge No. 26, per foot.....	.20	.21	.23	.25	.26	.32	.37	.42	.47	.52
Galv'd Sheet Gauge No. 24, per foot.....	...	...	.29	.31	.32	.39	.46	.52	.58	.64

Double Bead—Slip Joint

Size, inches.....	3	3½	4	4½	5	6	7	8	9	10
Galv'd Sheet Gauge No. 30, per foot.....	.16½	.17½	.19½	.21½	.22½	.27	.31	.35	.40	.44
Galv'd Sheet Gauge No. 29, per foot.....	.17	.18	.20	.22	.23	.28	.32	.36	.41	.45
Galv'd Sheet Gauge No. 28, per foot.....	.19	.20	.22	.24	.25	.30	.35	.39	.43	.47
Galv'd Sheet Gauge No. 27, per foot.....	.21	.22	.24	.26	.27	.33	.37	.42	.47	.51
Galv'd Sheet Gauge No. 26, per foot.....	.23	.24	.26	.28	.29	.35	.40	.45	.50	.55
Galv'd Sheet Gauge No. 24, per foot.....	...	...	.32	.34	.35	.42	.49	.55	.61	.67

Galvanized Gutters

Made in 7, 8 and 10-foot lengths of galvanized steel. Backs of troughs same height as bead end. For high backs add 2½ cents per foot to list price for each additional inch added to back.

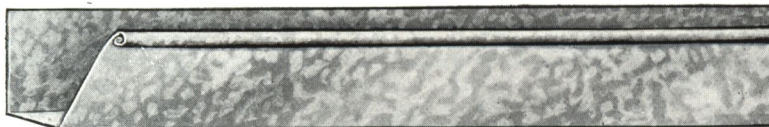


Fig. 5721. Gutter

Size, inches.....	6	7	8
Depth, inches.....	4	5	5¾
Girth, inches.....	15	18	20
Galvanized, per foot.....	.37	.45	.50

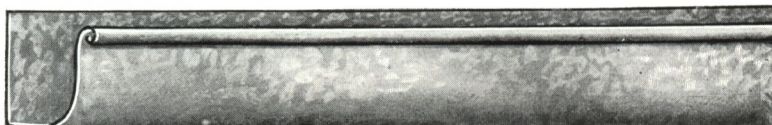


Fig. 5722. Gutter

Size, inches.....	6	7	8
Depth, inches.....	4½	5½	7
Girth, inches.....	15	18	22
Galvanized, per foot.....	.37	.45	.55

Galvanized Gutters—Continued



Fig. 5730. Gutter

Fig. 5730. Gutter

Size, inches.....	6	7	8
Depth, inches.....	5½	6	6
Girth, inches.....	18	20	22
Galvanized, per foot	.45	.50	.55

Fig. 5731. Gutter

Size, inches.....	6	7	8
Depth, inches.....	5½	6½	7
Girth, inches.....	18	20	22
Galvanized, per foot	.45	.50	.55

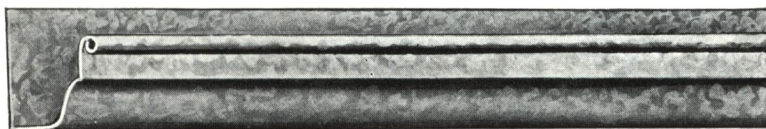


Fig. 5731. Gutter

Galvanized Eave Trough Mitres

Steel and Genuine Iron



Fig. 5732. Outer Corner Mitre



Fig. 5733. Inner Corner Mitre

Single Bead—Lap Joint—Mitres

Size, inches.....	3	4	5	6	7	8
Standard Gauge, per dozen.....	2.25	2.75	3.00	3.50	4.25	5.00
No. 26 Gauge, per dozen.....	3.00	3.60	3.90	4.50	5.75	6.50
No. 24 Gauge, per dozen.....	3.75	4.50	4.80	5.50	6.75	8.00

Double Bead—Lap Joint—Mitres

Size, inches.....	3	4	5	6	7	8
Standard Gauge, per dozen.....	2.75	3.25	3.50	4.00	4.75	5.50
No. 26 Gauge, per dozen.....	3.60	4.25	4.65	5.20	6.25	7.25
No. 24 Gauge, per dozen.....	4.50	5.25	5.80	6.50	7.75	9.00

Single Bead—Slip Joint—Mitres

Size, inches.....	3	4	5	6	7	8
Standard Gauge, per dozen.....	2.75	3.25	3.50	4.00	4.75	5.50
No. 26 Gauge, per dozen.....	3.60	4.25	4.65	5.20	6.25	7.25
No. 24 Gauge, per dozen.....	4.50	5.25	5.80	6.50	7.75	9.00

Double Bead—Slip Joint—Mitres

Size, inches.....	3	4	5	6	7	8
Standard Gauge, per dozen.....	3.25	3.75	4.00	4.50	5.25	6.00
No. 26 Gauge, per dozen.....	4.20	4.90	5.20	5.85	6.75	7.90
No. 24 Gauge, per dozen.....	5.20	6.00	6.50	7.25	8.25	10.00

End Pieces, Caps and Outlets

Galvanized Steel and Galvanized Charcoal Iron

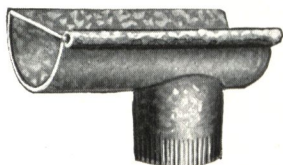


Fig. 5734. End Piece

End Pieces, Complete

Size, inches.....	3	3½	4	4½	5	6	7	8
Per dozen.....	2.80	2.80	3.10	3.45	3.45	4.15	4.70	5.25

Caps Only

Size, inches.....	3	3½	4	4½	5	6	7	8
Per dozen.....	.95	.95	1.10	1.20	1.20	1.45	1.70	2.10

Outlets Only

Size, inches.....	3	3½	4	4½	5	6
Per dozen.....	.75	.80	.85	.95	.95	1.20

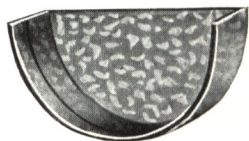


Fig. 5735. Cap only

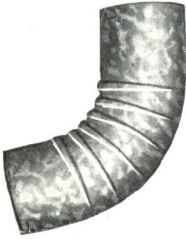
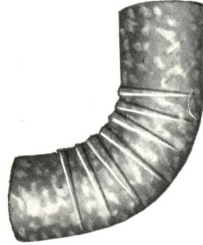
Wrought Iron Gutter Braces



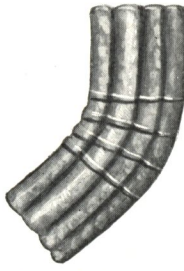
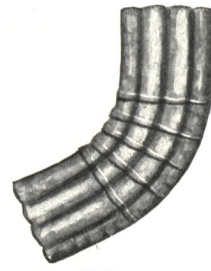
Fig. 5736. Gutter Brace

	Galvanized	Black
1/8 x 1 x 12 inches long, each.....	.21	.15
1/8 x 1 x 15 inches long, each.....	.23	.17
1/8 x 1 x 18 inches long, each.....	.26	.20

Conductor Pipe Elbows and Shoes

Fig. 5740
No. 0. 30 DegreesFig. 5741
No. 1. 45 DegreesFig. 5742
No. 2. 60 DegreesFig. 5743
No. 3. 75 DegreesFig. 5744
No. 4. 90 DegreesFig. 5745
Shoe. 75 Degrees

Round Corrugated

Fig. 5746
No. 0. 30 DegreesFig. 5747
No. 1. 45 DegreesFig. 5748
No. 2. 60 Degrees

Standard Price—One-piece Plain Round and Round Corrugated Elbows and Shoes, all
Angles, Galvanized Steel, Terne and Tin and Cold Rolled Copper

Size, inches	2	2½	3	4	5	6
Elbows, Galvanized, each	.30	.36	.36	.60	.60	1.25
Shoes, Galvanized, each	.40	.48	.48	.75	.75	1.50
Elbows, 14-ounce Copper, each	.70	.90	.90	1.35	1.35	2.00
Elbows, 16-ounce Copper, each	.75	1.00	1.00	1.50	1.50	2.25
Shoes, 14-ounce Copper, each	.75	1.00	1.00	1.50	1.50	2.25
Shoes, 16-ounce Copper, each	.85	1.10	1.10	1.65	1.65	2.50

Elbows—Adjustable and Stiff

Galvanized Stiff Elbows—No. 24 Charcoal Iron

Size, inches	4	5	5½	6	7	8	9	10	12	14
Price, per dozen	2.00	2.80	3.20	3.40	4.00	5.00	6.00	8.00	12.00	16.00

Stove Pipe Elbows—No. 26 Steel

Size, inches	4	4½	5	5½	5¾	6	7	8
Per dozen	.85	.90	1.00	1.10	1.20	1.20	1.70	2.60

Adjustable Tin Elbows

Size, inches	1½	2	2½	3	4	4½	5	5½	6	7
Per dozen	.70	.70	.85	1.00	1.10	1.40	1.40	1.80	1.80	2.20
Size, inches	8	8½	9	10	11	12	13	14	16	18
Per dozen	2.80	3.40	3.40	3.90	5.00	5.80	7.00	9.00	12.00	14.00

Fig. 5749
Adjustable Elbow

Adjustable Galvanized Iron Elbows

Size, inches	1½	2	2½	3	4	4½	5	5½	6	7
Per dozen	.70	.70	.85	1.00	1.30	1.50	1.80	2.10	2.30	2.80
Size, inches	8	8½	9	10	11	12	13	14	16	18
Per dozen	3.80	4.20	4.20	5.70	6.50	7.80	8.70	10.00	15.50	17.20

Adjustable Elbows—Black Iron

Size, inches	1½	2	2½	3	4	4½	5	5½	6	7	8	8½	9	10
Per dozen	1.00	1.00	1.00	1.00	1.00	1.00	1.20	1.50	1.50	2.00	2.80	3.40	3.40	4.20

Conductor Pipe Elbows and Shoes—Continued

Square Corrugated—Style A



Fig. 5750. No. 1



Fig. 5751. No. 2

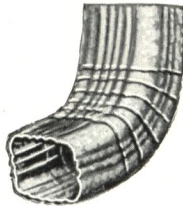


Fig. 5752. No. 3

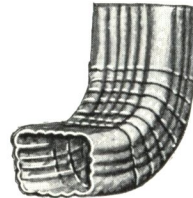


Fig. 5753. No. 4

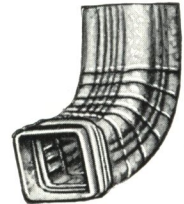


Fig. 5754. Shoe

Style B

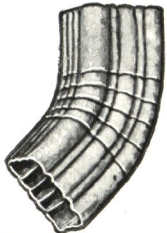


Fig. 5755. No. 1

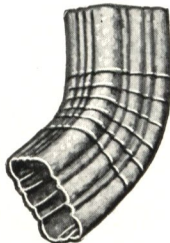


Fig. 5756. No. 2

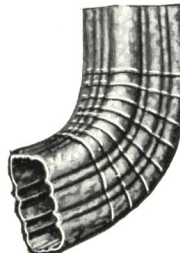


Fig. 5757. No. 3

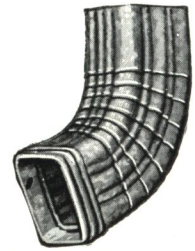


Fig. 5758. Shoe

Conductor Pipe Elbows and Shoes—Styles A and B. Galvanized Steel and Copper

Size, inches	2	3	4	5
Elbows, Galvanized, each	.40	.50	.65	1.00
Shoes, Galvanized, each	.50	.60	.80	1.25
Elbows, 14-ounce, Copper, each	.85	1.10	1.60	2.40
Elbows, 16-ounce, Copper, each	.90	1.20	1.80	2.75
Shoes, 14-ounce, Copper, each	.90	1.20	1.80	2.75
Shoes, 16-ounce, Copper, each	1.05	1.35	2.00	3.00

Universal Cast Iron Conductor Connections and Boots



Fig. 5759
Style H



Fig. 5759A
Style G



Fig. 5759B
Style D



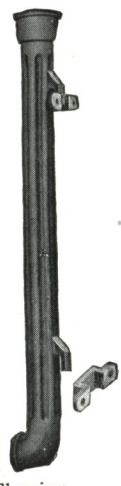
Fig. 5759K
Style C



Fig. 5759N
Style F



Fig. 5759P
Style E



Showing
Construction

Made to fit all Standard Conductor Pipe and Soil Pipe. Tops of Styles H, G, D and C are $\frac{1}{2}$ -inch over size to allow for fitting of Conductor Pipe.

Price List—4 $\frac{1}{2}$ -foot Length

Size Galv'd Pipe Inches	Style H & G Each	Style D & C Each	Style F & E Each	Inside Top Measurements Style F & E Inches
3	3.00	3.20	3.60	2 $\frac{3}{4}$ x 3 $\frac{1}{2}$
4	3.75	4.20	4.50	3 $\frac{1}{4}$ x 4 $\frac{1}{2}$
5	4.75	5.00	6.00	4 $\frac{1}{4}$ x 5 $\frac{1}{2}$
6	5.50	6.00	6.75	5 $\frac{1}{4}$ x 6 $\frac{1}{2}$

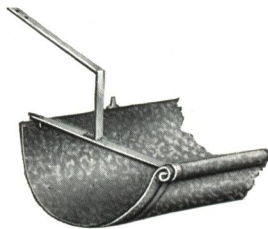
Note: For other than Standard lengths figure same rate per foot, plus 25 per cent. for alteration of patterns. No charge for Wall Brackets.

Wrought Iron Eave Trough Hangers—Galvanized

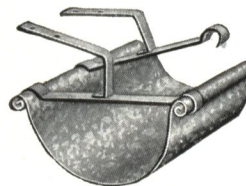
Neat, simple and durable. Can be quickly and easily adjusted to trough, and forms a complete brace as well as a hanger.



Fig. 5760. Hanger



Applied to Single Bead Trough



Applied to Double Bead Trough

Hangers with Rods, Complete

Size, inches.....	3	4	5	6	7	8	9	10
Per dozen.....	4.00	4.50	5.00	6.00	8.00	9.00	10.00	12.00

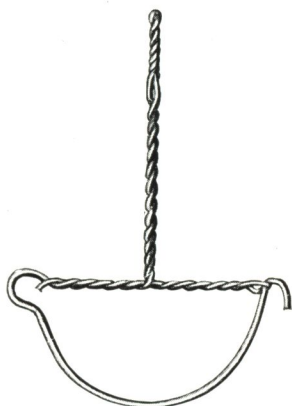


Fig. 5761. Single Bead

Wire Eave Trough Hangers Standard

List Prices Per Gross

Size Inches	Single Bead	Double Bead
3	2.75	3.00
3½	2.75	3.00
4	2.75	3.00
4½	3.00	3.25
5	3.00	3.25
6	3.50	3.75
7	4.00	4.25
8	4.50	4.75

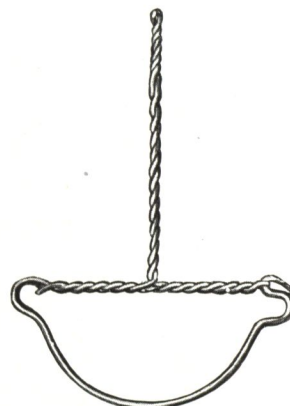


Fig. 5762. Double Bead

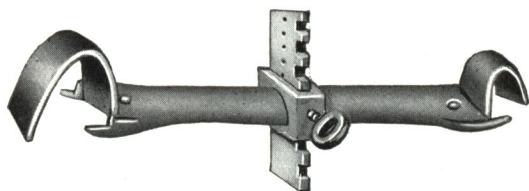


Fig. 5763. Yankee Adjustable Hanger

Yankee Adjustable Eaves-Trough Hanger

Packed complete with straps from 8 to 12 inches long.

3-inch Cross Bars, per gross.....	7.00
4-inch Cross Bars, per gross.....	7.50
5-inch Cross Bars, per gross.....	8.00
6-inch Cross Bars, per gross.....	10.50
7-inch Cross Bars, per gross.....	13.50

Measured across the inside of trough

Tongs for Fastening Cross Bars, each..... .75



Fig. 5764. Single Bead



Fig. 5765. Double Bead



Fig. 5766. Adjustable

Circles, with Bolts and Straps

Size, inches.....	3	4	5	6	7	8
Single and Double Bead, Plain Black, per 100.....	2.00	2.00	3.00	4.00	5.00	6.00
Single and Double Bead, Tinned, per 100.....	2.50	2.50	3.75	5.00	6.25	7.50

With Adjustable Bead Hooks

Size, inches.....	8	9	10	*12
Plain Black, per 100.....	7.00	9.00	10.00	12.00
Tinned, per 100.....	8.75	11.25	12.50	15.00

*Not made for Double Bead.

Adjustable Circles will extend 1½ inches above actual or given size, and adjust every ⅛ inch. State if wanted for ½ or ¾ inch beads.

Leader Hooks

Galvanized Leader Hooks—Wrought Iron

For Wood or Brick

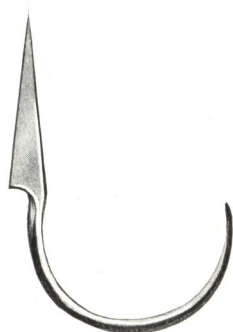


Fig. 5770

Size Inches
2
2½
3
3½
4
5
6

Galvanized Each
.05
.05
.06
.07
.09
.11
.14

Size Inches
7
8
9
10
11
12
..

Galvanized Each
.18
.24
.30
.39
.48
.60
...



Fig. 5771



Fig. 5773

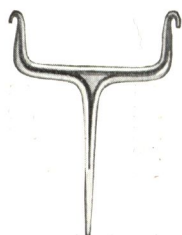


Fig. 5772

Wired Conductor Hooks—Galvanized

Price per 100

Size, inches.....	2	3	4	5
Per 100.....	5.00	6.00	7.00	8.00

Hinged Hooks—List Price Per 100

Size Inches	Sickle Wood	Sickle Brick	Corrugated Wood	Hinged Brick
2	1.50	1.75	3.00	3.50
3	2.50	2.75	4.00	4.50
4	3.50	4.25	5.00	5.50
5	4.50	6.00	6.00	6.50
6	5.50	7.50	7.00	7.50



Fig. 5774

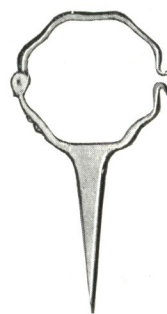


Fig. 5775

Wire Conductor Strainers

Galv'd, Round			Galv'd, Square		
No.	Price		No.	Price	
Inch Wire	Per		Inch Wire	Per	
Doz.	Doz.		Doz.	Doz.	
2 17	.50	2x2	17	1.40	
2 16	.60	2x2	16	1.70	
2 15	.80	2x3	17	1.60	
2 14	1.00	2x3	16	2.00	
2 13	1.20	2x4	17	1.70	
3 17	.70	2x4	16	2.20	
3 16	.90	3x3	17	1.70	
3 15	1.00	3x3	16	2.20	
3 14	1.40	3x4	16	1.90	
3 13	1.80	3x4	15	2.50	
4 16	1.00	3x5	16	2.10	
4 15	1.20	3x5	15	2.70	
4 14	1.60	4x4	16	2.50	
4 13	2.00	4x4	15	3.00	
5 15	1.70	4x5	16	2.70	
5 14	2.20	4x5	15	3.30	
5 13	3.00	4x5	14	4.00	
5 12	4.00	4x6	15	3.40	
6 15	1.90	4x6	14	5.50	
6 14	2.50	4x6	13	6.00	
6 13	3.50				
6 12	4.50				
7 14	4.00				
7 13	4.50				
7 12	5.00				
8 13	6.00				
8 12	8.00				

Also furnished
round and
square in all
sizes in copper.



Fig. 5776. Round



Fig. 5777. Square



Fig. 5778. Pipe Head

Galvanized Leader
Pipe HeadsFor Corrugated and Plain
Leaders

Size 2-inch, each.....	1.75
Size 3-inch, each.....	2.00
Size 4-inch, each.....	2.20
Size 5-inch, each.....	2.50
Size 6-inch, each.....	3.00

Rain Water Cut-off

Stock sizes, Galvanized

Size 2-inch, per dozen.	8.00
Size 3-inch, per dozen.	10.00
Size 4-inch, per dozen.	14.00
Size 5-inch, per dozen.	18.00
Size 6-inch, per dozen.	22.00

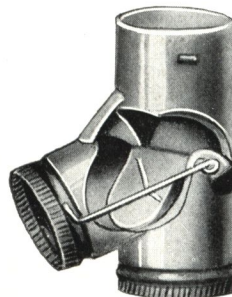


Fig. 5779. Rain-water Cut-off

Copper Leaders and Eave Troughs



Fig. 5780

Copper Leaders—Plain Round and Corrugated Round

Size, inches.....	2	3	4	5	6
14-ounce, per foot.....	.40	.50	.65	.85	1.00
16-ounce, per foot.....	.43	.54	.70	.92	1.08
18-ounce, per foot.....	.49	.61	.79	1.04	1.22



Fig. 5781

Copper Leaders—Square, Plain and Corrugated

Oz. Copper.....	14	16	18
$1\frac{3}{4}$ x $2\frac{1}{4}$ inches.....	.42	.45	.50
$2\frac{3}{8}$ x $3\frac{1}{4}$ inches.....	.52	.56	.63
$2\frac{3}{4}$ x $4\frac{1}{4}$ inches.....	.67	.72	.81
$3\frac{3}{4}$ x 5 inches.....	.87	.94	1.06

Square Copper Pipe

Size, inches.....	2 x 3	2 x 4	3 x 4	$3\frac{1}{2}$ x 5	4 x 5	4 x 6
14-ounce, per foot.....	.60	.71	.84	1.00	1.07	1.18
16-ounce, per foot.....	.63	.75	.88	1.05	1.13	1.25
20-ounce, per foot.....	.79	.95	1.10	1.30	1.42	1.55

Cold Rolled Copper Eave Trough—Double and Single Bead



Fig. 5782. Copper Eave Trough

Size, inches.....	3	4	5	6	7	8	9	10
Lap Joint, Single Bead, 14-ounce, per foot.....	.31	.40	.50	.61	.71	.82	.91	1.00
Lap Joint, Single Bead, 16-ounce, per foot.....	.33	.44	.54	.66	.77	.88	.98	1.08
Lap Joint, Single Bead, 18-ounce, per foot.....	.37	.50	.61	.75	.87	.99	....	....
Lap Joint, Double Bead, 14-ounce, per foot.....	.37	.46	.56	.67	.77	.88	1.00	1.12
Lap Joint, Double Bead, 16 ounce, per foot.....	.39	.50	.60	.72	.83	.94	1.07	1.20
Lap Joint, Double Bead, 18-ounce, per foot.....	.45	.58	.69	.83	.95	1.07	....	....
Slip Joint, Single Bead, 14-ounce, per foot.....	.34	.43	.53	.64	.74	.85	.96	1.06
Slip Joint, Single Bead, 16-ounce, per foot.....	.36	.47	.57	.69	.80	.91	1.03	1.14
Slip Joint, Single Bead, 18-ounce, per foot.....	.41	.53	.64	.78	.90	1.03	....	....
Slip Joint, Double Bead, 14-ounce, per foot.....	.40	.49	.59	.70	.80	.91	1.05	1.18
Slip Joint, Double Bead, 16-ounce, per foot.....	.42	.53	.63	.75	.86	.97	1.12	1.26
Slip Joint, Double Bead, 18-ounce, per foot.....	.49	.61	.72	.86	.98	1.11	....	....

Copper Leader Heads

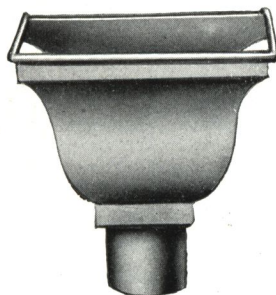
Size, inches.....	2	3	4	5	6
Price, each.....	3.00	3.25	3.50	3.75	4.00

Copper Conductor Strainers—Round

Size.....	2	2	2	2	2	3	3	3
No. Wire.....	17	16	15	14	13	17	16	15
Per dozen.....	1.20	1.60	1.80	2.00	2.50	1.60	2.00	2.50
Size.....	3	3	3	3	4	4	4	4
No. Wire.....	14	13	12	11	16	15	14	13
Per dozen.....	2.80	3.50	4.50	6.00	2.80	3.50	3.80	5.00
Size.....	4	5	5	5	6	6	6	6
No. Wire.....	12	15	14	13	15	14	13	13
Per dozen.....	5.75	4.80	6.00	7.00	5.50	6.50	7.50	....

Square

Size.....	2 x 2	2 x 3	2 x 4	3 x 3	3 x 4
Per dozen.....	1.60	2.00	2.50	3.20	4.00
Size.....	3 x 5	4 x 4	4 x 5	4 x 6	....
Per dozen.....	4.20	4.50	5.00	5.50	....

Fig. 5783
Copper Leader HeadFig. 5784
Copper Conductor
Strainer

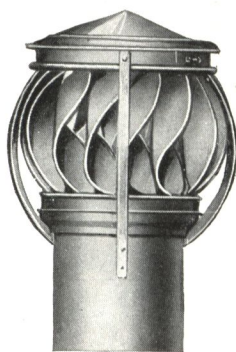


Fig. 5790
Empire Ventilator

Chimney Fixtures

Empire Ventilator

For smoky and faulty chimneys and for sanitary purposes. Made of heavy material and best workmanship throughout. Can also be furnished in brass or copper on special orders.

Sizes.....	4	5	6	7	8	9
Each.....	3.00	3.50	4.00	4.50	5.00	7.00
Sizes.....	10	12	15	18	20	24
Each.....	10.00	15.00	30.00	40.00	50.00	70.00

Larger sizes to order.

Cone Ventilators

For smoky chimneys and imperfect flues. Made of refined iron and galvanized after it has been made up. It will work at any angle. Designed for ventilating cars, churches, factories, schools, stables, breweries, ice houses, steamboats, or wherever circulation of air is necessary.

Cone Ventilators—Galvanized

Size.....	2	3	4	5	6	7	8	9	10
Each.....	1.00	1.50	1.75	2.50	3.40	4.00	4.65	5.20	5.75
Size.....	12	14	16	18	20	24	30	36	
Each.....	6.75	13.00	20.00	27.00	33.00	40.00	65.00	120.00	

Cone Ventilators—Copper

Size.....	4	5	6	7	8	9	10	12	14
Ounces.....	16	16	16	16	16	16	16	16	18
Each.....	1.75	2.50	3.00	3.50	4.25	4.50	4.75	5.00	6.00
Size.....	16	18	20	24	30	36	40	48	60
Ounces.....	18	18	20	24	24	28	28	28	28
Each.....	8.00	11.00	13.50	17.00	31.00	57.00	63.00	100.00	135.00

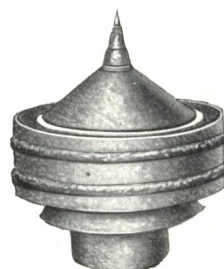


Fig. 5791
Cone Ventilator

Revolving Chimney Caps—Galvanized Iron

These Caps revolve on heavy glass bearings

Size.....	4	5	6	7	8	9	10	12
Each.....	1.50	1.55	1.60	1.75	2.00	2.50	3.00	3.50

Chimney Bases

6-inch Top, 8 x 8-inch Bottom, each.....	1.50
7-inch Top, 9 x 9-inch Bottom, each.....	2.00
8-inch Top, 10 x 10-inch Bottom, each.....	2.50

Special sizes to order.

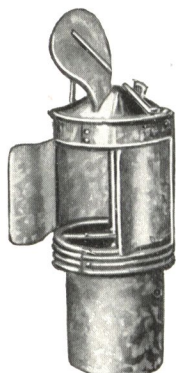


Fig. 5792
Chimney Cap

Hoods or Caps



Fig. 5793

Size, inches.....	2	3	4	5	6	7	8	9	10	11	12
Galvanized, each.....	.35	.46	.58	.69	.86	1.15	1.49	2.58	2.86	3.15	3.45

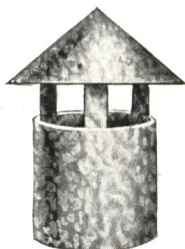


Fig. 5794
Shanty Cap

Shanty Caps—Galvanized

Made in No. 28 and No. 24 Gauge, and in the following sizes:

Size, inches: 4, 4½, 5, 5½, 6, 7, 8, 9, 10, 12.

Prices quoted on application.

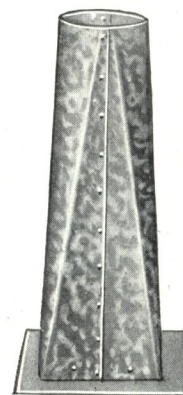
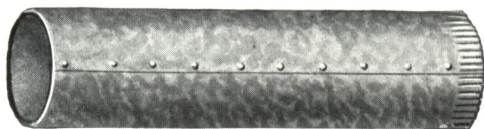


Fig. 5795
Chimney Base

Galvanized Riveted or Grooved Seam Sheet Iron Pipe

24-inch Joints



Longer Joints to Order

Fig. 5800. Sheet Iron Pipe

24-inch Galvanized Joints							
Size Inches	No. 28	No. 26	No. 24	No. 22	No. 20	No. 18	No. 16
4	.16	.18	.22	.26	.34	.50	.62
4½	.18	.19	.24	.28	.36	.52	.68
5	.20	.22	.26	.30	.38	.54	.72
5½	.22	.23	.27	.32	.42	.60	.76
6	.24	.26	.28	.34	.44	.64	.80
7	.28	.30	.36	.44	.54	.76	1.00
8	.32	.34	.40	.48	.60	.82	1.06
9	.34	.36	.44	.54	.66	.94	1.12
10	.38	.40	.48	.59	.72	.98	1.22
12	.44	.48	.55	.68	.82	1.11	1.40
14	.54	.58	.70	.84	.98	1.30	1.64
15	.58	.62	.74	.88	1.02	1.38	1.74
16	.65	.66	.78	.94	1.08	1.44	1.92
18	.74	.80	.98	1.14	1.34	1.78	2.28
20	.80	.88	1.16	1.22	1.42	1.86	2.34
22	.88	.94	1.14	1.32	1.56	2.00	2.46
24	.92	.98	1.20	1.38	1.62	2.08	2.56

24-inch Black Riveted Joints							
Size Inches	No. 28	No. 26	No. 24	No. 22	No. 20	No. 18	No. 16
4	.10	.12	.16	.20	.26	.42	.56
4½	.11	.14	.18	.22	.28	.44	.58
5	.12	.15	.19	.24	.30	.46	.62
5½	.13	.16	.20	.26	.32	.50	.66
6	.14	.17	.22	.28	.34	.52	.68
7	.17	.20	.26	.34	.44	.62	.84
8	.19	.26	.30	.38	.48	.68	.90
9	.21	.28	.32	.42	.52	.72	.98
10	.23	.30	.36	.46	.56	.80	1.16
12	.27	.32	.40	.52	.64	.90	1.18
14	.34	.40	.52	.66	.76	1.04	1.42
15	.36	.42	.54	.70	.80	1.10	1.46
16	.38	.44	.56	.72	.84	1.16	1.52
18	.48	.58	.74	.90	1.06	1.44	1.82
20	.52	.62	.78	.98	1.14	1.50	1.92
22	.56	.66	.82	1.02	1.22	1.62	2.06
24	.59	.70	.88	1.08	1.28	1.68	2.14

Ridging—Galvanized Iron and Black Steel—Painted



Fig. 5801. Ridging

	1½-inch Ridging	2-inch Ridging	2½-inch Ridging	3-inch Ridging
Diameter of Roll, inches	1½	2	2½	3
Width of Apron, inches	2	2½	3½	3½
Girth, inches	8	10	12	15
Galvanized, per foot	.16	.19	.23	.28
Painted, per foot	.14	.17	.21	.26

Corrugated Ridge or Capping

Made in 30-inch Sections

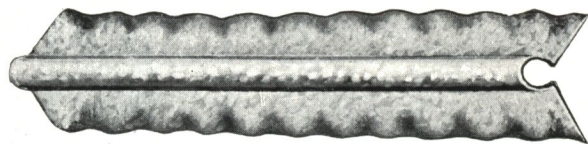


Fig. 5802. Corrugated Ridge Roll or Capping

Size Roll	No.	Price Per Foot		
		Galvanized	Painted	Black
2	28	.15	.14	.13
2	26	.16	.15	.14
2	24	.18	.17	.16
2½	28	.16	.15	.14
2½	26	.18	.17	.16
2½	24	.20	.19	.18
3	28	.18	.17	.16
3	26	.20	.19	.18
3	24	.22	.21	.20

V Angle Ridge Cap

Made of Galvanized Iron and Black Steel, Painted. Two Sizes



Fig. 5803

	Galvanized Per Foot	Black Steel Painted Per Foot
3-inch Apron, Girth, 6 inches	.13	.11
4-inch Apron, Girth, 8 inches	.16	.14

Corrugated Sheets

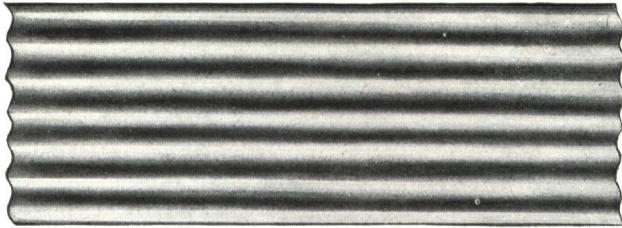


Fig. 5810. Corrugated Sheet

Made from the best quality Box Annealed Sheets and are painted on both sides with best iron ore paint, ground in pure linseed oil; also best galvanized sheets.

Wire nails for applying are 10 cents per square, and sufficient dry paint for a second coating is 5 cents per square. Nails and paint will not be shipped unless ordered.

Regular Size of Sheets

Size of Corrugations: $1\frac{1}{4}$, $2\frac{1}{2}$ and 3 inches.

Width of Sheets: $20\frac{1}{2}$, 22, 25, $26\frac{1}{2}$, $27\frac{1}{2}$ inches.

Length of Sheets: 42, 48, 54, 60, 84, 96, 108, 120 inches.

Thickest Gauges Corrugated: $1\frac{1}{4}$ -inch corrugation, No. 24 W. G. $2\frac{1}{2}$ and 3 inch corrugations, No. 20 W. G.

Special lengths to order.

Approximate Weights Per Square

Gauge No.	28	27	26	24	22	20
Black, per Square, pounds	73	78	86	114	142	178
Painted Red both sides, per Square, pounds	75	80	88	116	144	180
Galvanized, per Square, pounds	86	95	101	128	160	187

Prices quoted on application.

Black and Galvanized Sheets

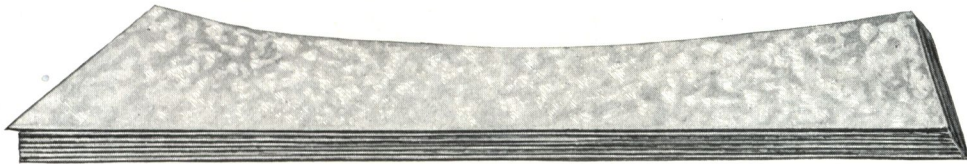


Fig. 5811

Black Sheets

Gauges	10	11	12	13	14	15	16
Weight per square foot, ounces	90.	80.	70.	60.	50.	42.4	40.
Weight per square foot, pounds	5.625	5.	4.375	3.75	3.125	2.65	2.5
Gauges	17	18	19	20	21	22	23
Weight per square foot, ounces	36.	32.	28.	22.	21.5	20.	18.
Weight per square foot, pounds	2.25	2.	1.75	1.5	1.34	1.25	1.125
Gauges	24	25	26	27	28	29	30
Weight per square foot, ounces	16.	14.	12.	11.04	10.	9.	8.
Weight per square foot, pounds	1.	.875	.75	.69	.625	.5625	.5

Galvanized Sheets

Gauges	10	11	12	13	14	15	16
Weight per square foot, ounces	92.5	82.5	72.5	62.5	52.5	47.5	42.5
Weight per square foot, pounds	5.781	5.156	4.531	3.906	3.281	2.969	2.656
Gauges	17	18	19	20	21	22	23
Weight per square foot, ounces	38.5	34.5	30.5	26.5	24.5	22.5	20.5
Weight per square foot, pounds	2.406	2.156	1.906	1.656	1.531	1.406	1.281
Gauges	24	25	26	27	28	29	30
Weight per square foot, ounces	18.5	16.5	14.5	13.5	12.5	11.5	10.5
Weight per square foot, pounds	1.156	1.031	.9062	.8437	.7812	.7187	.6562

Sheet Sizes—Black and Galvanized

24 x 72	24 x 84	24 x 96	24 x 101	24 x 108	24 x 120
26 x 72	26 x 84	26 x 96	26 x 101	26 x 108	26 x 120
28 x 72	28 x 84	28 x 96	28 x 101	28 x 108	28 x 120
30 x 72	30 x 84	30 x 96	30 x 101	30 x 108	30 x 120
36 x 72	36 x 84	36 x 96	36 x 101	36 x 108	36 x 120

Black and Galvanized Sheets furnished at market prices.

Gas Brackets and Trimmings

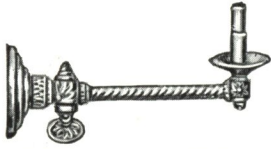


Fig. 5820. 6-inch Stiff Bracket

Each..... .35



Fig. 5821. 6-inch Square Polished Bracket

Each..... .60



Fig. 5822. One Swing Bracket

Each..... .50

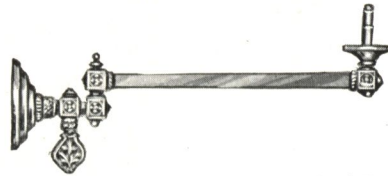


Fig. 5823. One Swing Square Polished Bracket

Each..... .85

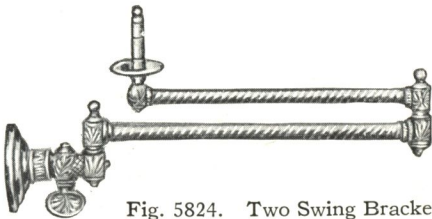


Fig. 5824. Two Swing Bracket

Each..... .80

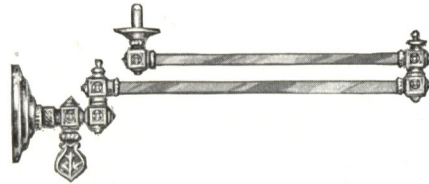


Fig. 5825. Two Swing Square Polished Bracket

Each..... 1.30



Fig. 5826. Globe Holder

4-inch, per dozen..... 1.25

5-inch, per dozen..... 1.40



Fig. 5827. Brass Pillar

Per dozen..... .25



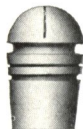
Fig. 5828

Pillar and Howlett Regulator Burner

Per dozen..... 1.20

Fig. 5829
Monitor BurnerMonitor Heating
Burners—All Iron

No.	Top Inches	Per Doz.
1	2	4.50
2	3	6.50
3	4	8.50

Fig. 5829B
Lava Tip

Per gross..... 3.50



Fig. 5829G. Wire Globe

Per dozen..... 2.70

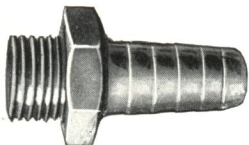


Fig. 5829A. Male Hose End

Hose Ends—Male and Female

Size.....	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{3}{8}$	$\frac{1}{4}$	$\frac{1}{8}$
Male, per dozen...	9.00	4.00	3.50	3.20	2.80
Fem'le, per dozen...	6.00	3.60	3.20	2.90	2.60

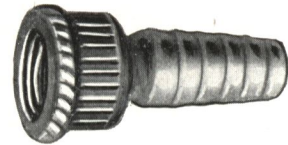


Fig. 5829D Female Hose End

Standard Brass Gas Fixture Fittings



Fig. 5830. Straight Cock

Size $\frac{3}{8}$ x $\frac{3}{8}$ inch, per dozen.....	2.45
Size $\frac{3}{8}$ x $\frac{1}{4}$ inch, per dozen.....	2.35
Size $\frac{3}{8}$ x $\frac{1}{2}$ inch, per dozen.....	2.25
Size $\frac{1}{4}$ x $\frac{1}{4}$ inch, per dozen.....	2.25
Size $\frac{1}{4}$ x $\frac{1}{2}$ inch, per dozen.....	2.10
Size $\frac{1}{8}$ x $\frac{1}{8}$ inch, per dozen.....	2.00

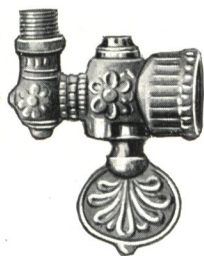


Fig. 5831. Elbow Burner Cock

Size $\frac{3}{8}$ inch, per dozen.....	2.60
Size $\frac{1}{4}$ inch, per dozen.....	2.25
Size $\frac{1}{8}$ inch, per dozen.....	2.10
Size $\frac{3}{8}$ inch Long, per dozen.....	4.10
Size $\frac{1}{4}$ inch Long, per dozen.....	4.10

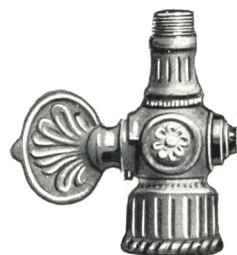


Fig. 5832. Pillar Cock, Female

Size $\frac{3}{8}$ inch, per dozen.....	2.25
Size $\frac{1}{4}$ inch, per dozen.....	2.10
Size $\frac{1}{8}$ inch, per dozen.....	1.95



Fig. 5883. Pillar Cock, Male

Size $\frac{3}{8}$ inch, per dozen.....	2.75
Size $\frac{1}{4}$ inch, per dozen.....	2.60
Size $\frac{1}{8}$ inch, per dozen.....	2.45

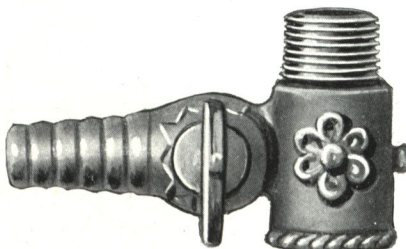


Fig. 5834. Independent Cock

Size $\frac{3}{8}$ inch, per dozen.....	3.25
Size $\frac{1}{4}$ inch, per dozen.....	3.00
Size $\frac{1}{8}$ inch, per dozen.....	2.75



Fig. 5835. Hose Cock, Male

Size $\frac{3}{4}$ inch, per dozen.....	4.50
Size $\frac{1}{2}$ inch, per dozen.....	3.10
Size $\frac{3}{8}$ inch, per dozen.....	2.60
Size $\frac{1}{4}$ inch, per dozen.....	2.45
Size $\frac{1}{8}$ inch, per dozen.....	2.25

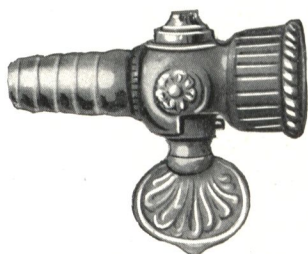


Fig. 5836. Hose Cock, Female

Size $\frac{3}{4}$ inch, per dozen.....	4.00
Size $\frac{1}{2}$ inch, per dozen.....	2.80
Size $\frac{3}{8}$ inch, per dozen.....	2.45
Size $\frac{1}{4}$ inch, per dozen.....	2.25
Size $\frac{1}{8}$ inch, per dozen.....	2.10



Fig. 5837. Top Swing

Size $\frac{3}{8}$ x $\frac{3}{8}$ inch, per dozen.....	3.10
Size $\frac{3}{8}$ x $\frac{1}{4}$ inch, per dozen.....	2.75
Size $\frac{3}{8}$ x $\frac{1}{2}$ inch, per dozen.....	2.60
Size $\frac{1}{4}$ x $\frac{1}{4}$ inch, per dozen.....	2.45
Size $\frac{1}{4}$ x $\frac{1}{2}$ inch, per dozen.....	2.25
Size $\frac{1}{8}$ x $\frac{1}{8}$ inch, per dozen.....	2.10



Fig. 5838. Bracket Swing Cock

Size $\frac{3}{8}$ x $\frac{3}{8}$ inch, per dozen.....	4.55
Size $\frac{3}{8}$ x $\frac{1}{4}$ inch, per dozen.....	4.20
Size $\frac{3}{8}$ x $\frac{1}{2}$ inch, per dozen.....	4.05
Size $\frac{1}{4}$ x $\frac{1}{4}$ inch, per dozen.....	4.05



Fig. 5839. Straight Nozzle

Size $\frac{3}{8}$ inch, per dozen.....	.95
Size $\frac{1}{4}$ inch, per dozen.....	.80
Size $\frac{1}{8}$ inch, per dozen.....	.50



Fig. 5839A. Side Nozzle

Size $\frac{3}{8}$ inch, per dozen.....	1.15
Size $\frac{1}{4}$ inch, per dozen.....	.80
Size $\frac{1}{8}$ inch, per dozen.....	.50



Fig. 5839B

Two-light Bracket or Y-Body

Size $\frac{3}{8}$ x $\frac{3}{8}$ inch, per dozen.....	2.25
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Nason Heavy China Lavatory

Whitestone



Plate 5840

Whitestone Heavy China All Roll Rim Oblong Lavatory, with Open Overflow and Anti-splash Rim, supported on China Pedestal, with Nickel-plated No. 17 Quick Opening Compression Faucets, China Handles marked "Hot" and "Cold," Fulton Pop-up Waste with China Knob, Trap, Supply Pipes and Control Valves.

Complete as shown and described, size 24 x 20 inches	45.65
Complete as shown and described, size 26 x 22 inches	50.75
Complete as shown and described, size 28 x 22 inches	56.00
Complete as shown and described, size 30 x 24 inches	59.00
Complete as shown and described, size 33 x 24 inches	69.00
Complete as shown and described, size 36 x 24 inches	86.00

Nason Heavy China Lavatory

Whitestone



Plate 5850

Whitestone Heavy China All Roll Rim Oblong Lavatory, with Open Overflow and Anti-splash Rim, supported on China Pedestal, with Nickel-plated Quick Opening Compression Combination Spout Supply Fixture, with China Handles marked "Hot" and "Cold," Fulton Pop-up Waste with China Knob, Trap, Supply Pipes and Control Valves.

Complete as shown and described, size 24 x 20 inches.....	57.50
Complete as shown and described, size 26 x 22 inches.....	62.50
Complete as shown and described, size 28 x 22 inches.....	68.00
Complete as shown and described, size 30 x 24 inches.....	71.00
Complete as shown and described, size 33 x 24 inches.....	81.00
Complete as shown and described, size 36 x 24 inches.....	98.00

Nason Heavy China Lavatory

Whitestone

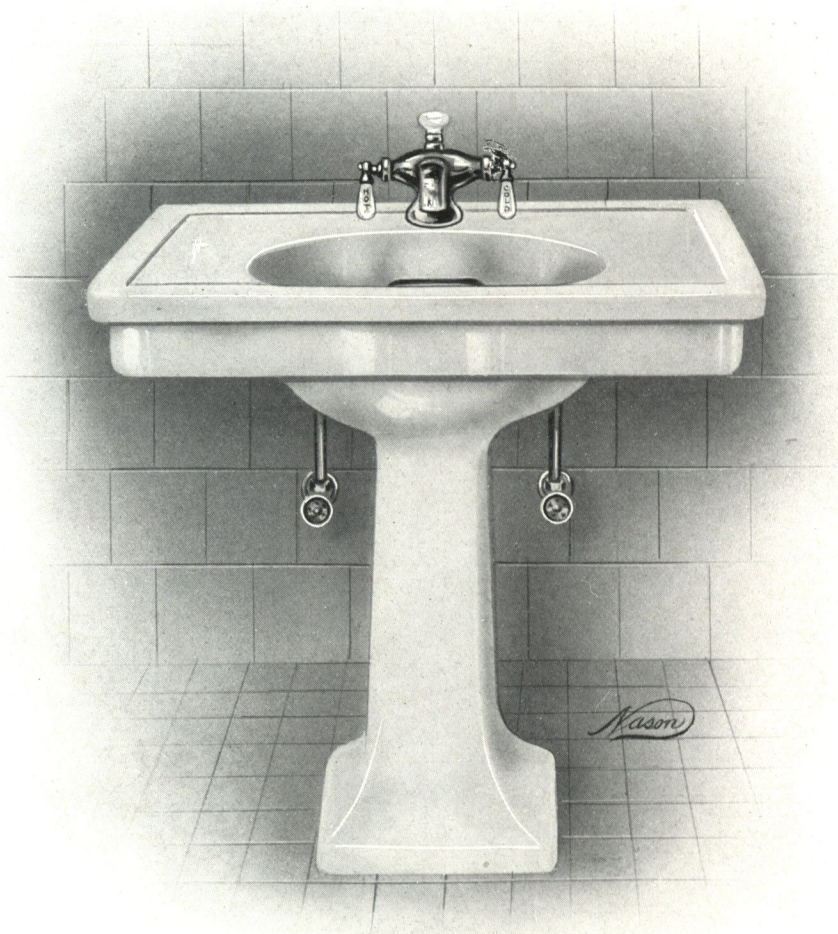


Plate 5860

Whitestone Heavy China All Roll Rim Oblong Lavatory, with Hooded Overflow and Anti-splash Rim, supported on China Pedestal, with Nickel-plated No. 2200 Quatern Double Basin Cock, with China Side Handles marked "Hot" and "Cold," Perfecto Pop-up Waste with China Knob, Trap, Supply Pipes and Control Valves.

Complete as shown and described, size 24 x 20 inches.....	53.75
Complete as shown and described, size 26 x 22 inches.....	58.75
Complete as shown and described, size 28 x 22 inches.....	64.00
Complete as shown and described, size 30 x 24 inches.....	67.00
Complete as shown and described, size 33 x 24 inches.....	77.00
Complete as shown and described, size 36 x 24 inches.....	94.00

Nason Heavy China Lavatory

Whitestone



Plate 5870

Whitestone Heavy China All Roll Rim Oblong Lavatory, with Hooded Overflow and Anti-splash Rim, supported on China Pedestal, with Nickel-plated Compression Combination Supply and Waste Fixture with Fulton Pop-up Waste, China Cross Handles and Escutcheons on Valves and China Knob on Waste, Nickel-plated Trap, Supply Pipes and Control Valves.

Complete as shown and described, size 24 x 20 inches.....	55.25
Complete as shown and described, size 26 x 22 inches.....	60.00
Complete as shown and described, size 28 x 22 inches.....	65.25
Complete as shown and described, size 30 x 24 inches.....	68.25
Complete as shown and described, size 33 x 24 inches.....	78.25
Complete as shown and described, size 36 x 24 inches.....	95.25
If with Quick Opening Compression Fixture, add.....	3.50

Nason Heavy China Lavatory

Raymond

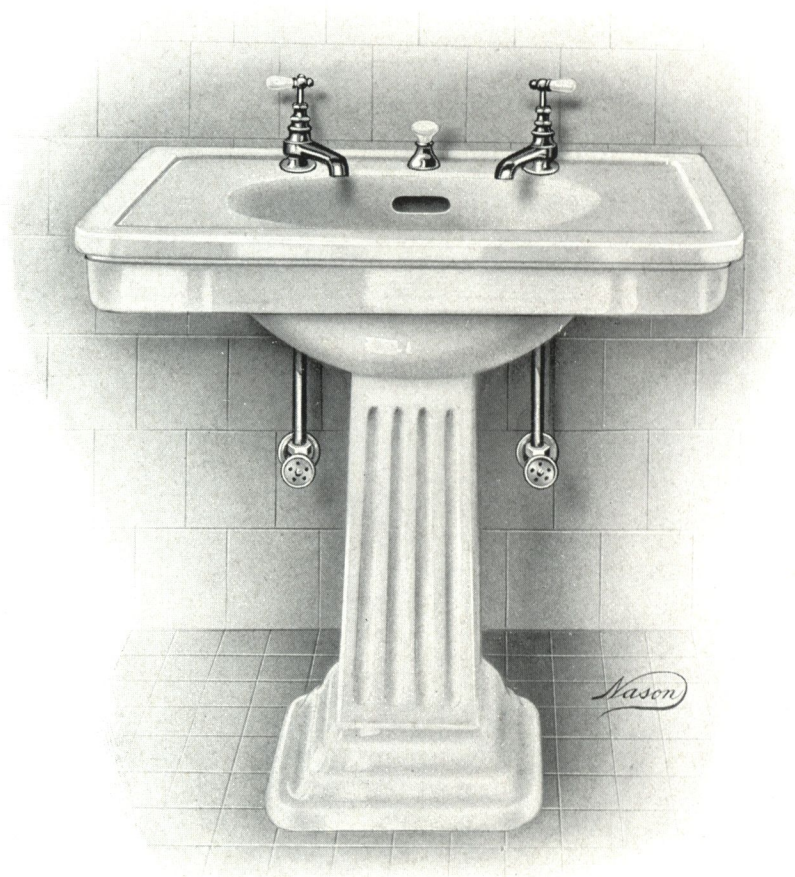


Plate 5880

Raymond Heavy China All Roll Rim Oblong Lavatory, with Open Overflow and Anti-splash Rim, supported on Square China Fluted Pedestal, with Nickel-plated No. 17 Quick Opening Compression Faucets, China Handles marked "Hot" and "Cold," Fulton Pop-up Waste with China Knob, Trap, Supply Pipes and Control Valves.

Complete as shown and described, size 24 x 20 inches.....	45.75
Complete as shown and described, size 26 x 22 inches.....	50.75
Complete as shown and described, size 28 x 22 inches.....	56.00
Complete as shown and described, size 30 x 24 inches.....	59.00
Complete as shown and described, size 33 x 24 inches.....	69.25
Complete as shown and described, size 36 x 24 inches.....	86.00

Nason Heavy China Lavatory

Raymond

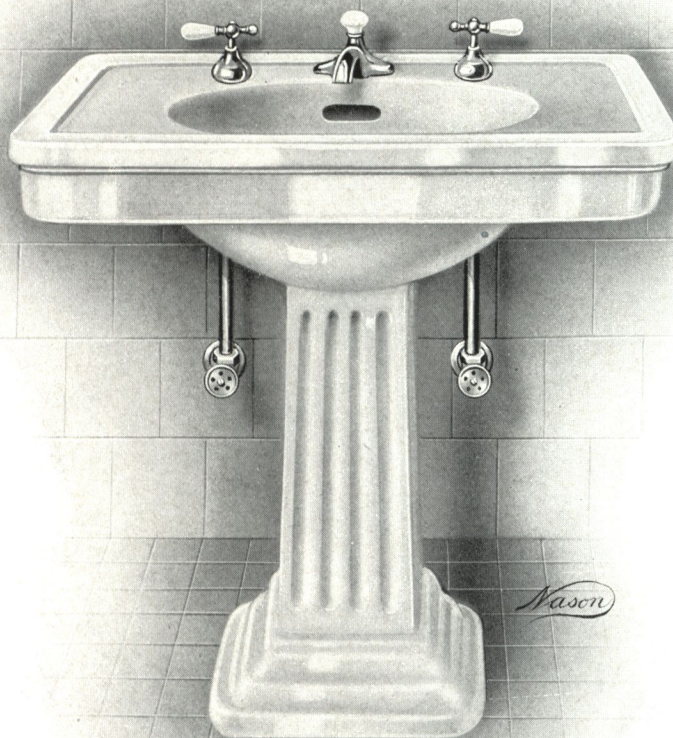


Plate 5890

Raymond Heavy China All Roll Rim Oblong Lavatory, with Open Overflow and Anti-splash Rim, supported on Square China Fluted Pedestal, with Nickel-plated Quick Opening Compression Combination Spout Supply Fixture with China Handles marked "Hot" and "Cold," Fulton Pop-up Waste with China Knob, Trap, Supply Pipe and Control Valves.

Complete as shown and described, size 24 x 20 inches.....	57.50
Complete as shown and described, size 26 x 22 inches.....	62.50
Complete as shown and described, size 28 x 22 inches.....	68.00
Complete as shown and described, size 30 x 24 inches.....	71.00
Complete as shown and described, size 33 x 24 inches.....	81.00
Complete as shown and described, size 36 x 24 inches.....	98.00

Nason Heavy China Lavatory

Delsarte



Plate 5900

Delsarte Heavy China All Roll Rim Lavatory, with Open Overflow and Anti-splash Rim, supported on China Pedestal, with Nickel-plated No. 17 Quick Opening Compression Faucets with China Handles marked "Hot" and "Cold," Fulton Pop-up Waste with China Knob, Trap, Supply Pipes and Control Valves.

Complete as shown and described, size 28 x 22 inches.....	56.00
Complete as shown and described, size 30 x 24 inches.....	59.00
Complete as shown and described, size 33 x 24 inches.....	69.00
Complete as shown and described, size 36 x 24 inches.....	86.00

Nason Heavy China Lavatory

Delsarte



Plate 5910

Delsarte Heavy China All Roll Rim Lavatory, with Open Overflow and Anti-splash Rim, supported on China Pedestal, with Nickel-plated Quick Opening Compression Combination Spout Supply Fixture with China Handles marked "Hot" and "Cold," Fulton Pop-up Waste with China Knob, Trap, Supply Pipes and Control Valves.

Complete as shown and described, size 28 x 22 inches.....	68.00
Complete as shown and described, size 30 x 24 inches.....	71.00
Complete as shown and described, size 33 x 24 inches.....	81.00
Complete as shown and described, size 36 x 24 inches.....	98.00

Nason Heavy China Lavatory

Morgan

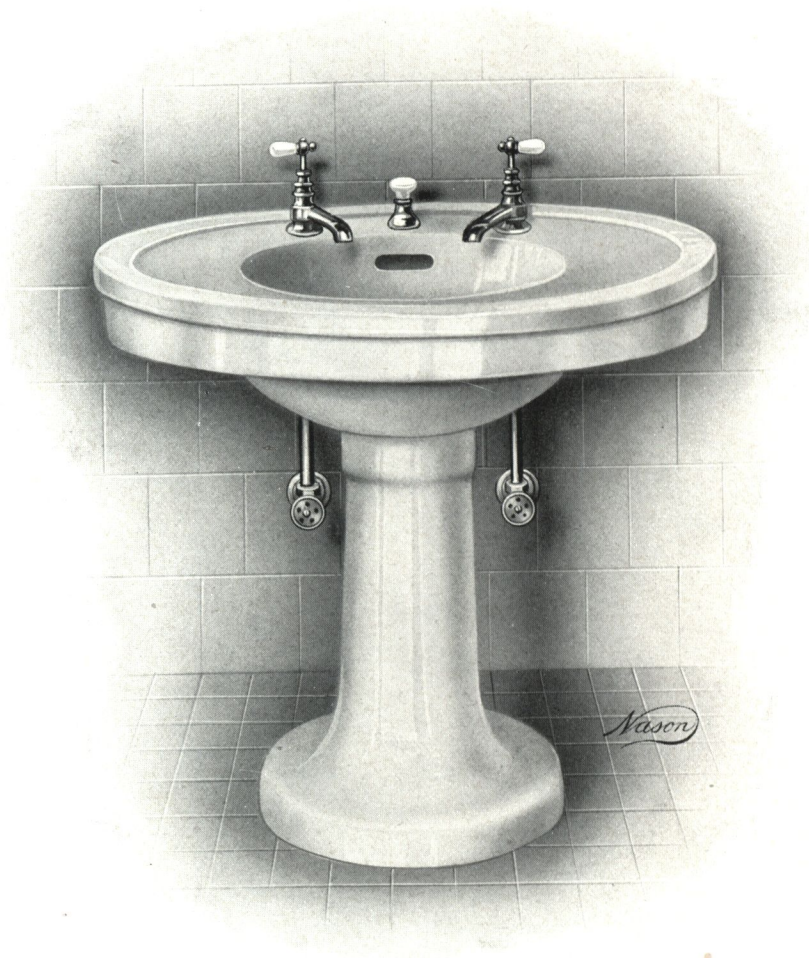


Plate 5920

Morgan Heavy China All Roll Rim Oval Lavatory, with Open Overflow and Anti-splash Rim, supported on Round China Pedestal, and Nickel-plated Crescent Wall Braces, with Nickel-plated No. 17 Quick Opening Compression Faucets with China Handles marked "Hot" and "Cold," Fulton Pop-up Waste with China Knob, Trap, Supply Pipes and Control Valves.

Complete as shown and described, size 25 x 22 inches.....	51.25
Complete as shown and described, size 28 x 22 inches.....	56.50
Complete as shown and described, size 30 x 24 inches.....	59.50
Complete as shown and described, size 33 x 24 inches.....	69.50
Complete as shown and described, size 36 x 24 inches.....	86.50

Nason Heavy China Lavatory

Morgan

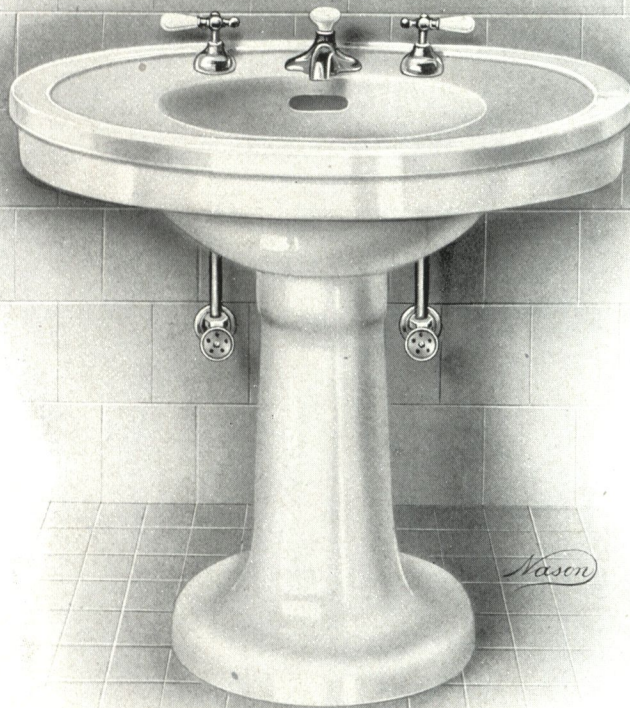


Plate 5930

Morgan Heavy China All Roll Rim Oval Lavatory, with Open Overflow and Anti-splash Rim, supported on Round China Pedestal, and Nickel-plated Crescent Wall Braces, with Nickel-plated Quick Opening Compression Combination Spout Supply Fixture, with China Handles marked "Hot" and "Cold," Fulton Pop-up Waste with China Knob, Trap, Supply Pipes and Control Valves.

Complete as shown and described, size 25 x 22 inches.....	63.25
Complete as shown and described, size 28 x 22 inches.....	68.50
Complete as shown and described, size 30 x 24 inches.....	71.50
Complete as shown and described, size 33 x 24 inches.....	81.50
Complete as shown and described, size 36 x 24 inches.....	98.50

Nason Heavy China Lavatory

Scarsdale

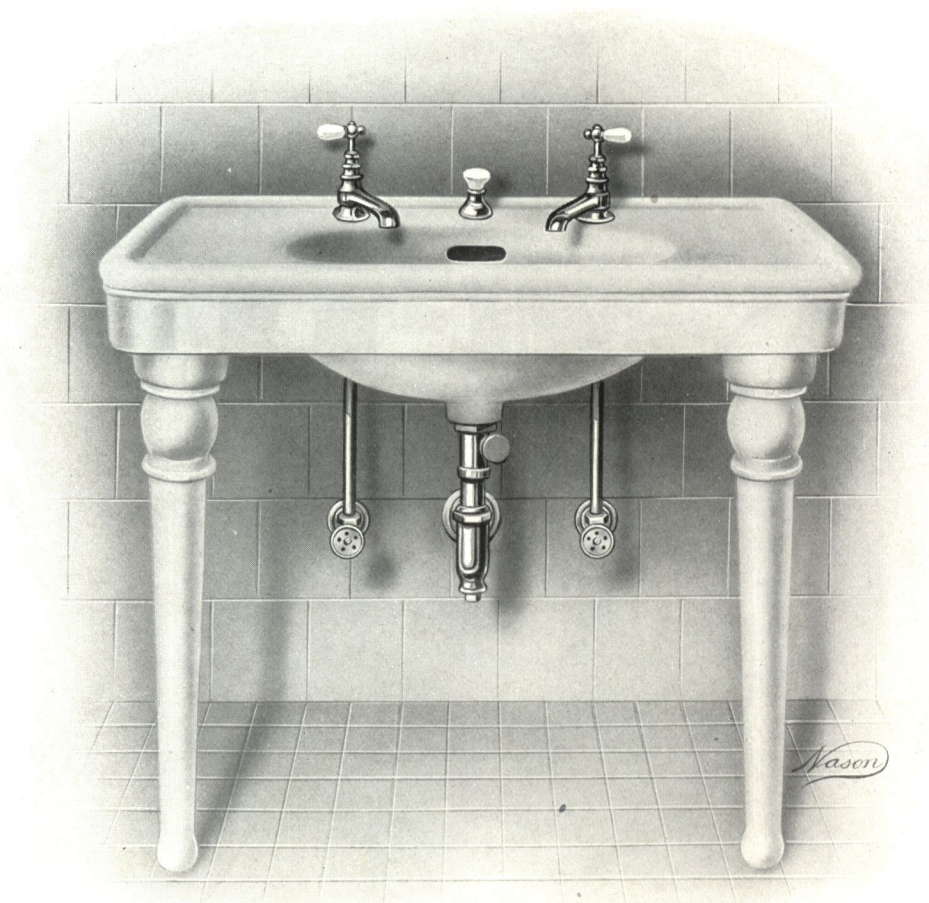


Plate 5940

Scarsdale Heavy China All Roll Rim Oblong Lavatory, with Open Overflow and Anti-splash Rim, supported on China Legs and Wall Brackets, with Nickel-plated No. 17 Quick Opening Compression Faucets, China Handles marked "Hot" and "Cold," Fulton Pop-up Waste with China Knob, Trap, Supply Pipes and Control Valves.

Complete as shown and described, size 28 x 22 inches.....	51.50
Complete as shown and described, size 30 x 24 inches.....	55.50
Complete as shown and described, size 33 x 24 inches.....	65.50
Complete as shown and described, size 36 x 24 inches.....	82.50

Nason Heavy China Lavatory

Scarsdale

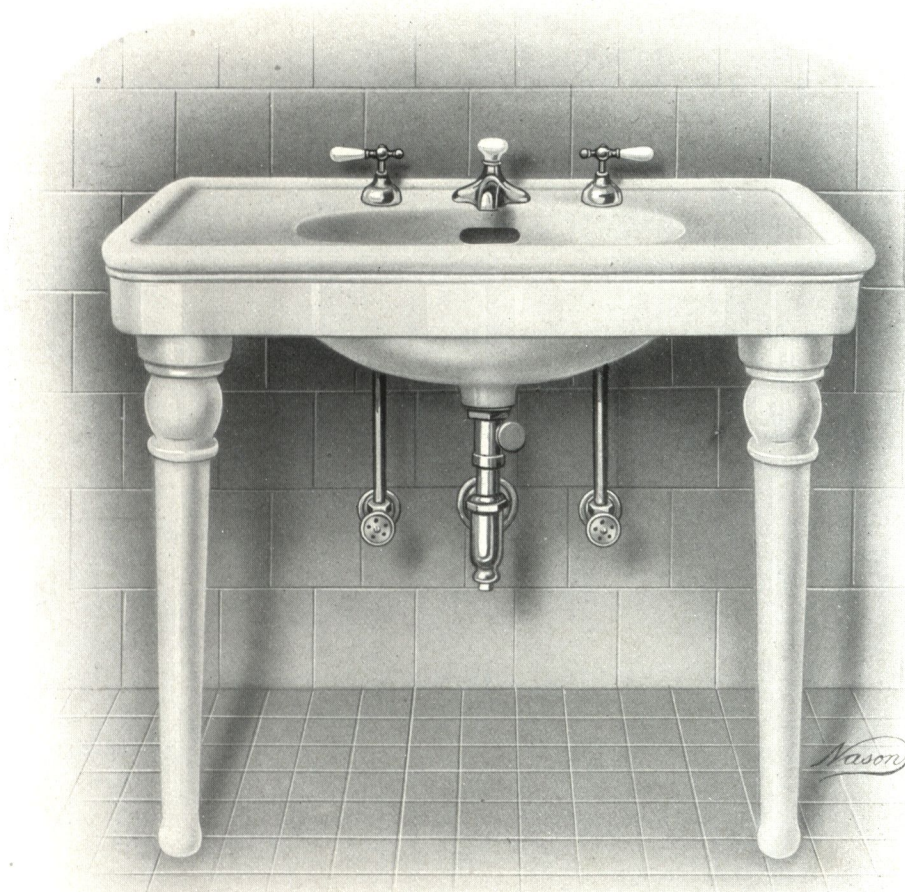


Plate 5950

Scarsdale Heavy China All Roll Rim Oblong Lavatory, with Open Overflow and Anti-splash Rim supported on China Legs and Wall Brackets, with Nickel-plated Quick Opening Compression Combination Spout Supply Fixture with China Handles marked "Hot" and "Cold," Fulton Pop-up Waste with China Knob, Trap, Supply Pipes and Control Valves.

Complete as shown and described, size 28 x 22 inches.....	63.50
Complete as shown and described, size 30 x 24 inches.....	66.25
Complete as shown and described, size 33 x 24 inches.....	77.25
Complete as shown and described, size 36 x 24 inches.....	94.25

Nason Heavy China Lavatory

Scarsdale

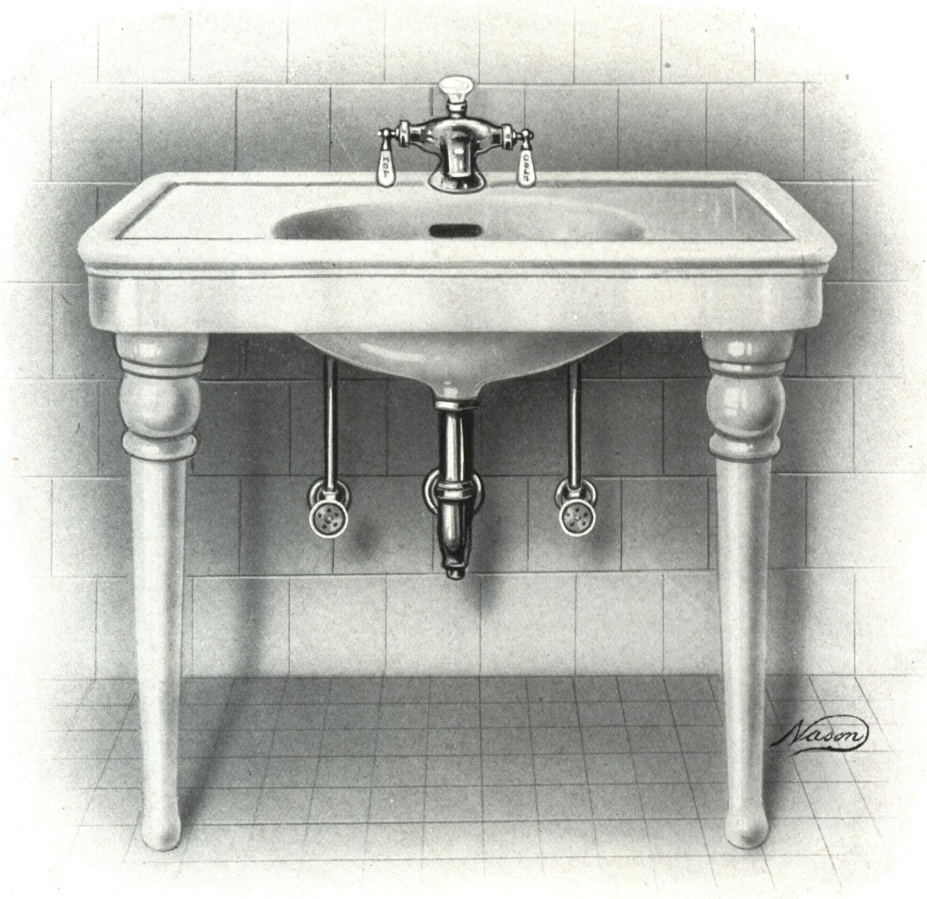


Plate 5960

Scarsdale Heavy China All Roll Rim Oblong Lavatory, with Open Overflow and Anti-splash Rim, supported on China Legs and Wall Brackets, with Nickel-plated No. 2200 Quatern Double Basin Cock with China Side Handles marked "Hot" and "Cold," Perfecto Pop-up Waste with China Knob, Trap, Supply Pipes and Control Valves.

Complete as shown and described, size 28 x 22 inches.....	59.00
Complete as shown and described, size 30 x 24 inches.....	63.25
Complete as shown and described, size 33 x 24 inches.....	72.75
Complete as shown and described, size 36 x 24 inches.....	89.50

Nason Heavy China Lavatory

Roscoe

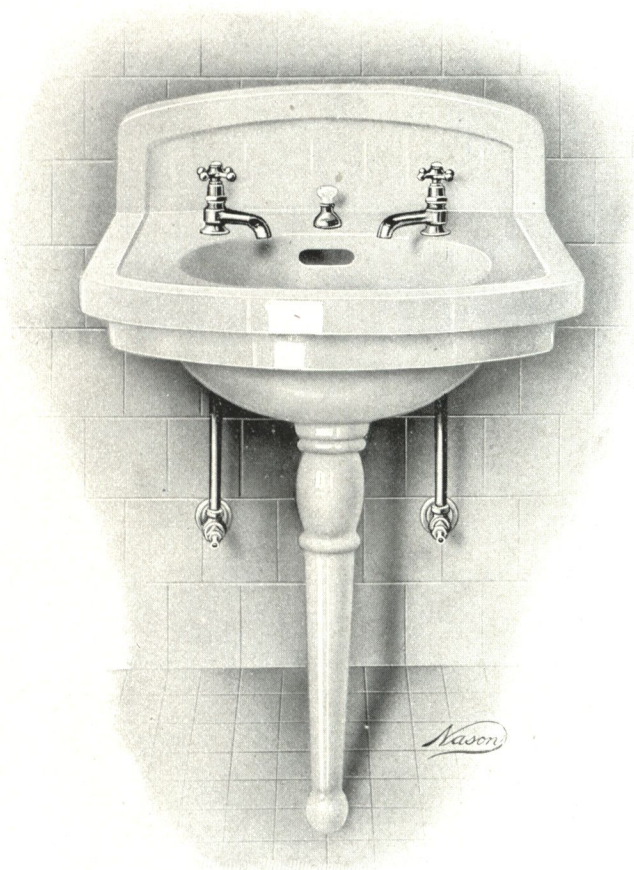


Plate 5970

Roscoe Heavy China Lavatory, with Integral Back, Open Overflow and Anti-splash Rim, supported on China Center Leg and Wall Brackets, with Nickel-plated No. 6 Peerless Self-closing Faucets with China Index Handles, Fulton Pop-up Waste with China Knob, Trap, Supply Pipes and Loose Key Angle Control Valves.

Price as described, size 20 x 18 inches.....	38.00
Price as described, size 24 x 20 inches.....	47.50
Price as described, size 27 x 22 inches.....	61.00

Height of Back, 7 inches

Nason Heavy China Lavatory

Roscoe

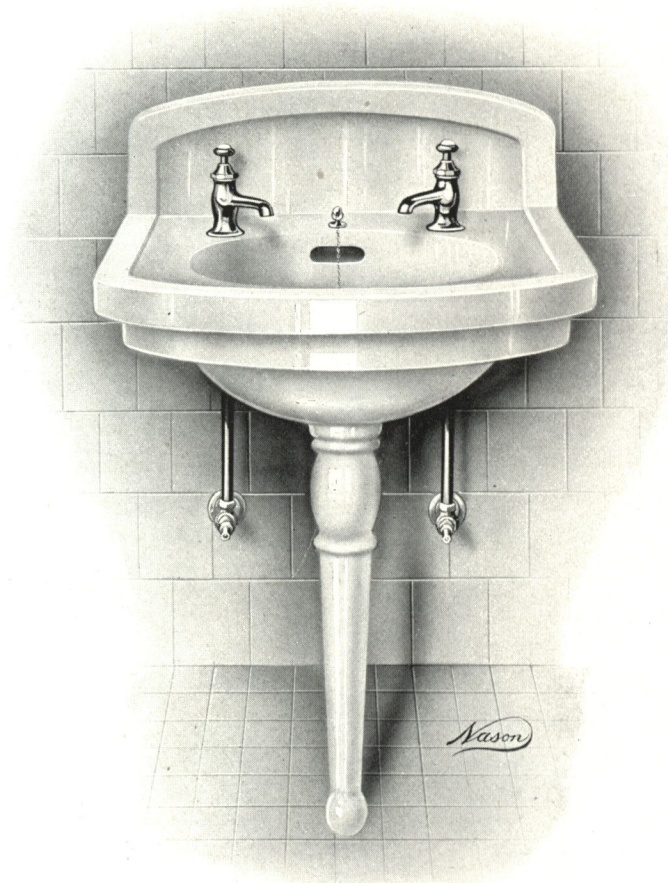


Plate 5980

Roscoe Heavy China Lavatory, with Integral Back, Open Overflow and Anti-splash Rim, supported on China Center Leg and Wall Brackets, with Nickel-plated Nason "Unit" Push Button Self-closing Faucets marked "Hot" and "Cold," Chain Stay and Chain, Waste Plug with Rubber Stopper, Trap, Supply Pipes and Loose Key Angle Control Valves.

Price as described, size 20 x 18 inches.....	36.50
Price as described, size 24 x 20 inches.....	47.75
Price as described, size 27 x 22 inches.....	59.60

Height of Back, 7 inches

Nason Heavy China Lavatory

Roscoe

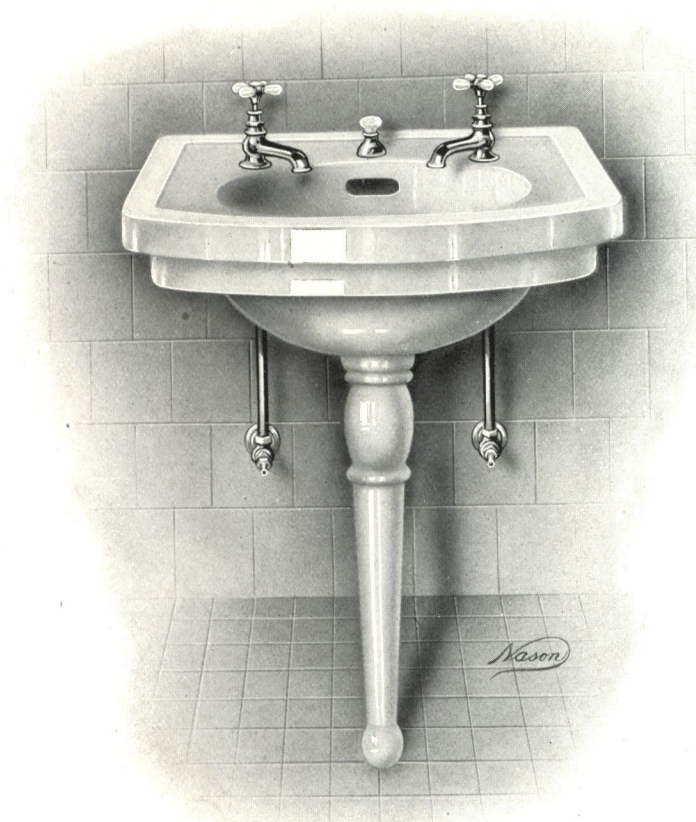


Plate 5990

Roscoe Heavy China All Roll Rim Lavatory, with Open Overflow and Anti-splash Rim, supported on China Center Leg and Wall Brackets, with Nickel-plated No. 10½ Compression Faucets, with Four Arm China Cross Handles and Indexes, Fulton Pop-up Waste with China Knob, Trap, Supply Pipes and Loose Key Angle Control Valves.

Price as described, size 20 x 18 inches.....	35.00
Price as described, size 24 x 20 inches.....	40.00

Nason Heavy China Lavatory

Roscoe

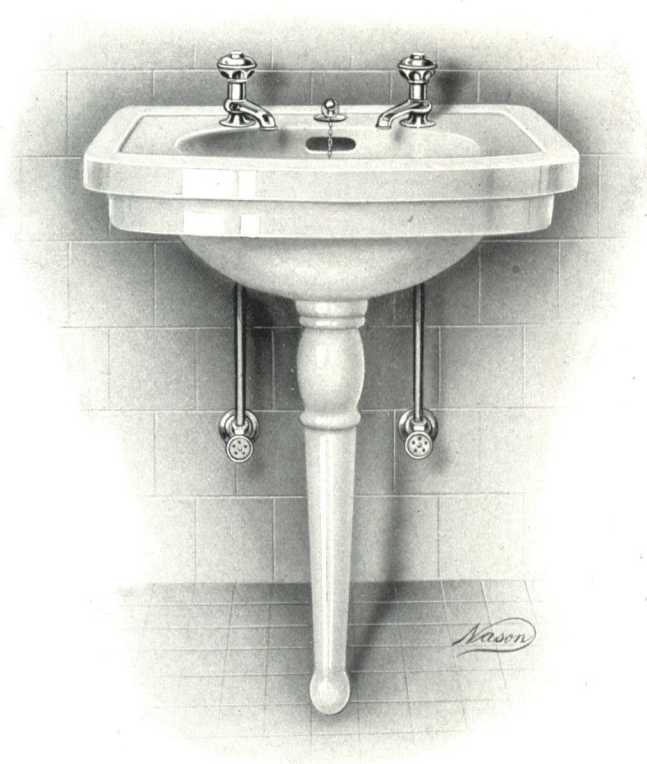


Plate 6000

Roscoe Heavy China All Roll Rim Lavatory, with Open Overflow and Anti-splash Rim, supported on China Center Leg and Wall Brackets, with Nickel-plated No. 8 Crown Handle Ball Bearing Self-closing Faucets with China Indexes, Chain Stay and Chain, Waste Plug with Rubber Stopper, Trap, Supply Pipes and Wheel Handle Angle Control Valves.

Price as described, size 20 x 18 inches.....	33.00
Price as described, size 24 x 20 inches.....	38.00

Nason Heavy China Lavatory

Roscoe

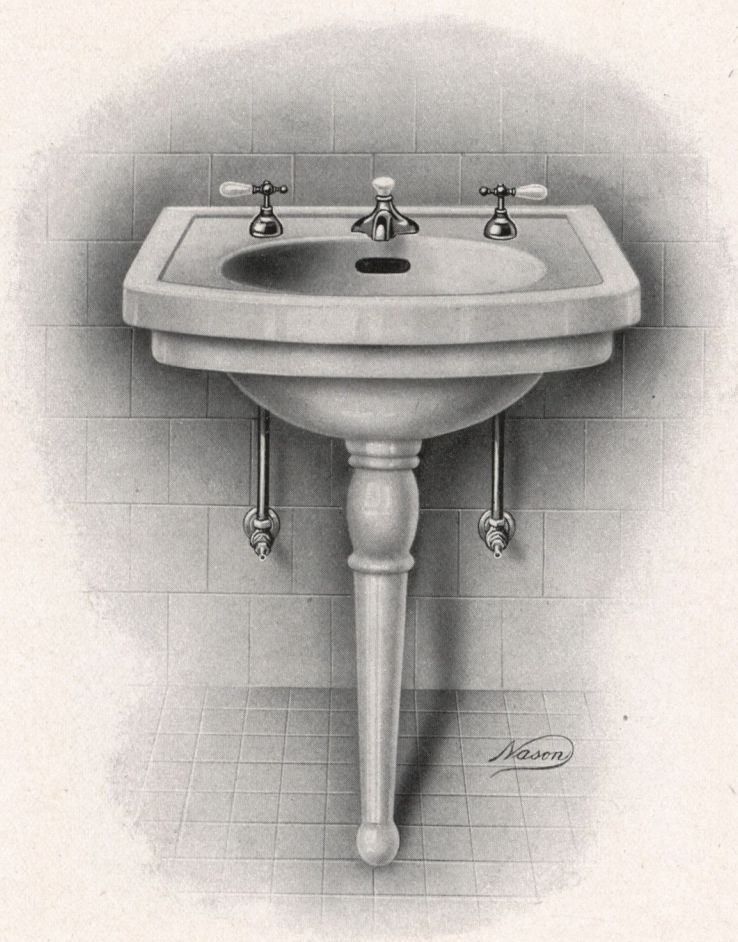


Plate 6010

Roscoe Heavy China All Roll Rim Lavatory, with Open Overflow and Anti-splash Rim, supported on China Center Leg and Wall Brackets, with Nickel-plated Quick Opening Compression Combination Spout Supply Fixture with China Handles marked "Hot" and "Cold," Fulton Pop-up Waste with China Knob, Trap, Supply Pipes and Loose Key Angle Control Valves.

Price as described, size 20 x 18 inches.....	45.50
Price as described, size 24 x 20 inches.....	47.00

Nason Heavy China Lavatory

Vanderbilt



Plate 6020

Vanderbilt Heavy China Square Corner Lavatory, with Integral Back and End, Open Overflow and Anti-splash Rim, supported on China Center Leg and Wall Brackets, with Nickel-plated No. 17 Quick Opening Compression Faucets, with China Lever Handles marked "Hot" and "Cold," Fulton Pop-up Waste with China Knob, Trap, Supply Pipes and Loose Key Angle Control Valves.

Price as described, size 24 x 20 inches..... 70.00

Height of Back, 6 inches

Furnished for Either Right or Left Hand Corner

Nason Heavy China Lavatory

Angler



Plate 6030

Angler Heavy China Corner Lavatory, with Integral Back and Open Overflow and Anti-splash Rim, supported on China Center Leg and Wall Brackets, with Nickel-plated No. 14 Quick Opening Compression Faucets, with China Lever Handles marked "Hot" and "Cold," Fulton Pop-up Waste with China Knob, Trap, Supply Pipes and Loose Key Angle Control Valves.

Price as described, size 16½ x 16½ inches.....	38.50
Price as described, size 19½ x 19½ inches.....	50.00
Price as described, size 24 x 24 inches.....	67.00

Height of Back, 6 inches

Nason Heavy China Lavatory

Roscoe

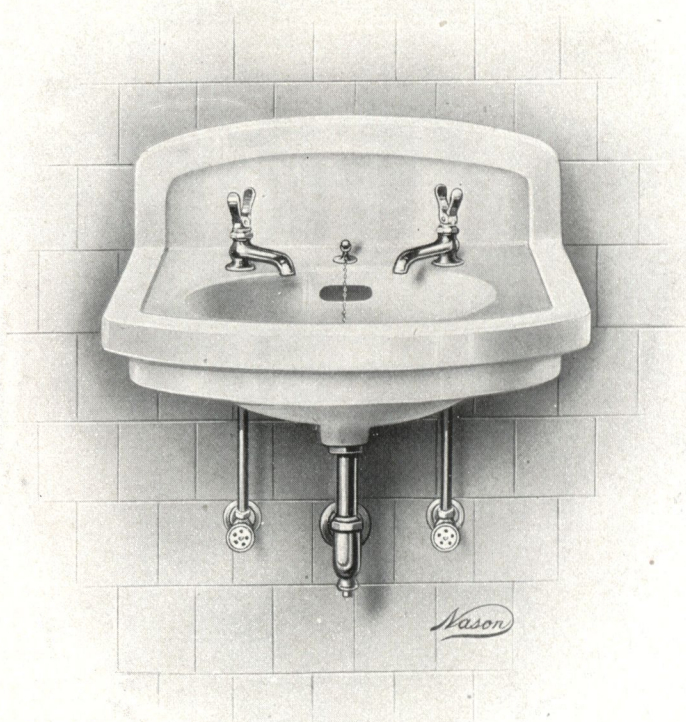


Plate 6040

Roscoe Heavy China Lavatory, with Integral Back, Open Overflow and Anti-splash Rim, supported on Concealed Wall Hangers, with Nickel-plated No. 4 Doherty Self-closing Faucets, Chain Stay and Chain, Waste Plug with Rubber Stopper, Trap and Supply Pipes, with Wheel Handle Angle Control Valves.

Sizes, inches.....	20 x 18	24 x 20
Height of Back, inches.....	6	7
Price as described.....	29.25	39.00

Nason Heavy China Lavatory

Harmo

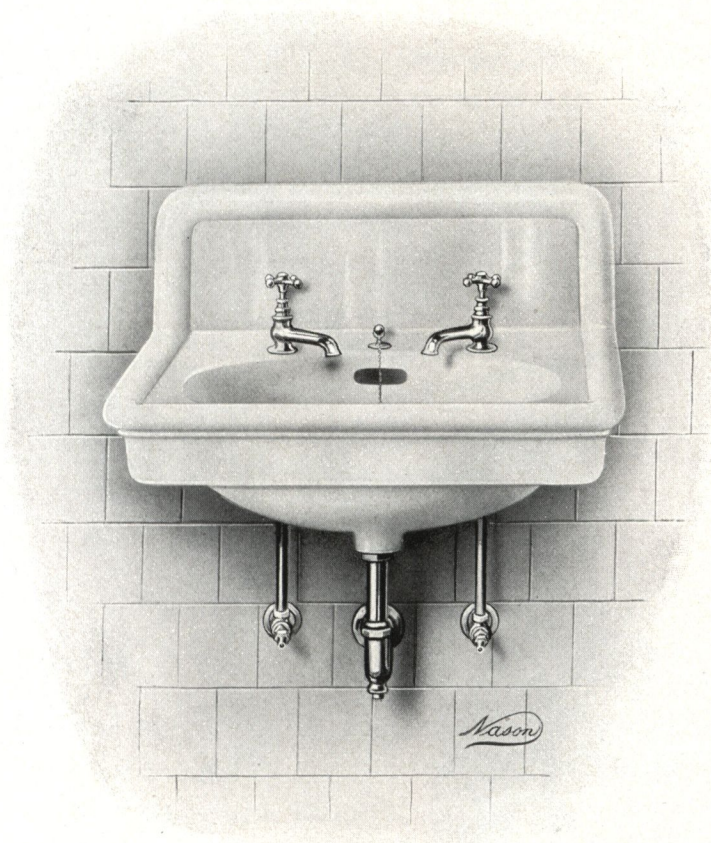


Plate 6050

Harmo Heavy China Lavatory, with Integral Back, Open Overflow and Anti-splash Rim, supported on Concealed Wall Hangers, with Nickel-plated No. 10 Compression Faucets with China Index Handles, Chain Stay and Chain, Waste Plug with Rubber Stopper, Trap and Supply Pipes with Loose Key Angle Control Valves.

Sizes, inches.....	20 x 18	24 x 20	24 x 20
Height of Back, inches.....	6	6	8
Price as described.....	28.00	37.00	45.00

If Heavy China Center Leg is wanted, add 5.00.

Nason Heavy China Lavatory

Elko



Plate 6060

Elko Heavy China Corner Lavatory, with Integral Back, Open Overflow and Anti-splash Rim, supported on Concealed Wall Hangers, with Nickel-plated No. 14 Quick Opening Compression Faucets with China Handles marked "Hot" and "Cold," Chain Stay, Chain, Waste Plug with Rubber Stopper, Trap and Supply Pipes with Loose Key Angle Control Valves.

Sizes, on sides, inches.	16½ x 16½	19½ x 19½	24 x 24
Price as described.....	31.50	43.00	60.00

If Heavy China Center Leg is wanted, add 5.00.

Height of Back, 6 inches

Nason Heavy China Lavatories

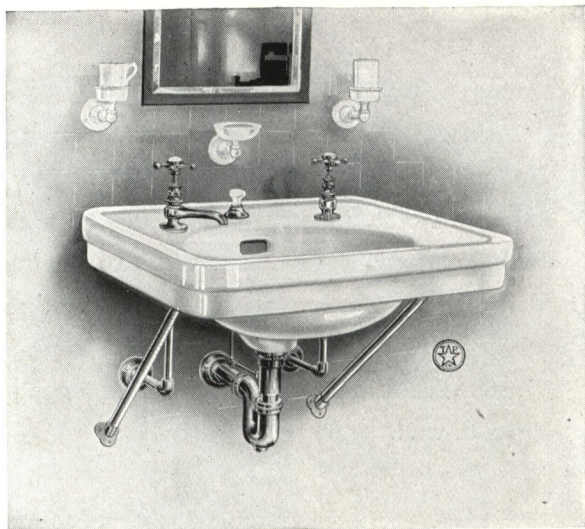


Plate 6070

Size, inches.....	20 x 18	24 x 21
Size of Bowl, inches.....	14 x 11	16 x 12
Price as described.....	29.00	33.00

Plate 6071

The Throop Heavy China Round Front Lavatory, with Open Overflow and Integral Back, supported on Concealed Wall Hangers with Nickel-plated Compression Combination Spout Supply Fixture, with China Index Handles, Waste Plug with Rubber Stopper and Chain, Trap and Supply Pipes and Wheel Handle Angle Control Valves.

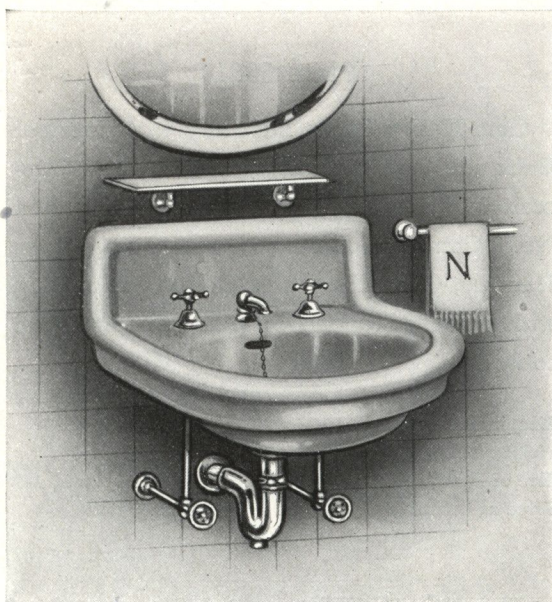


Plate 6071

Size, inches.....	20 x 18	24 x 20
Height of Back, inches.....	6	6
Price as described.....	35.50	45.00

Nason Heavy China Lavatories

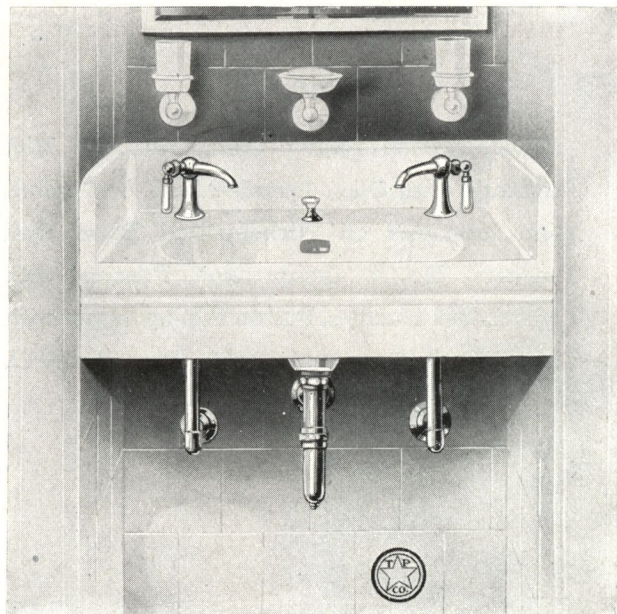


Plate 6080

Plate 6080

Nero Heavy China Recess Lavatory with Integral Back and Sides and Open Overflow, supported on Concealed Wall Hangers, with Nickel-plated No. 10 Colonial Quick Opening Compression Faucets with China Handles marked "Hot" and "Cold," Fulton Pop-up Waste with China Knob, Trap and Supply Pipes to wall.

Sizes, inches.....	24 x 20	27 x 21	30 x 23
Height of Back, inches....	4	4	4
Size Bowl, inches.....	12 x 16	12 x 16	13 x 17
Price as described.....	52.00	64.00	68.50

Plate 6081

Gem Heavy China Lavatory with Integral Back and Open Overflow, supported on Concealed Wall Hangers, with Nickel-plated No. 8 Compression Faucets with China Index Handles, Chain Stay and Chain, Waste Plug with Rubber Stopper, Trap and Supply Pipes to wall.

Size, inches.....	26 x 13
Height of Back, inches.....	4
Size of Bowl, inches.....	16½ x 10 x 6
Price as described.....	24.00

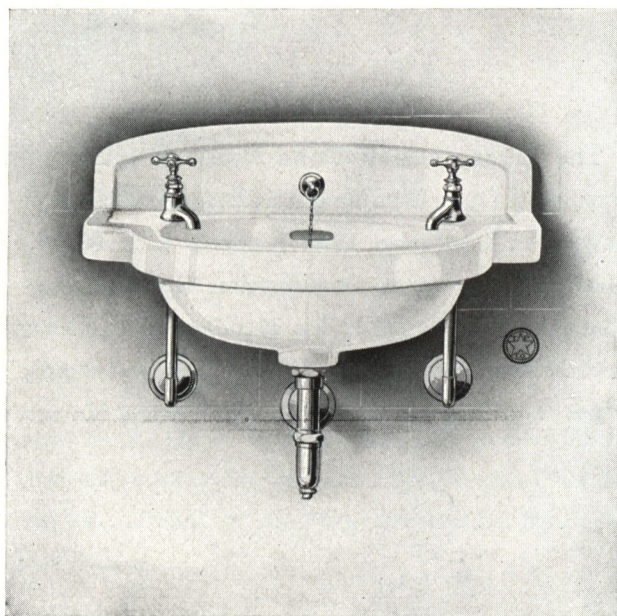
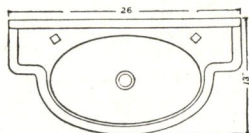
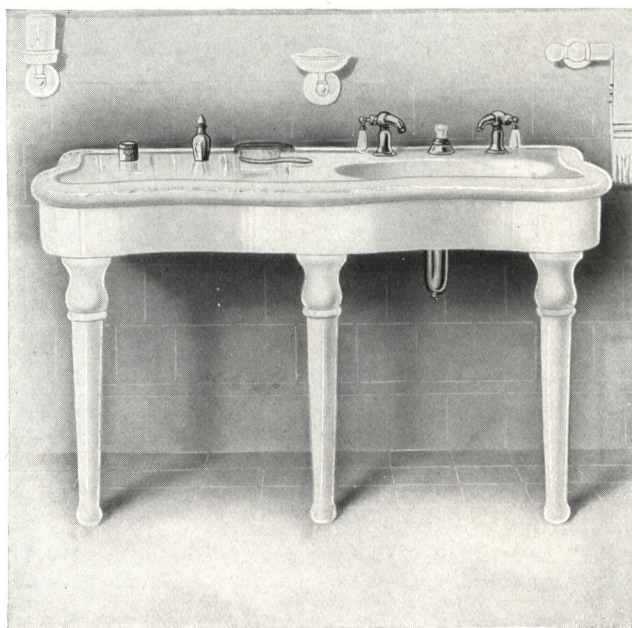


Plate 6081



Showing Dimensions of
Plate 6081 Lavatory

Nason Porcelain Lavatories



Duchess. Plate 6090

Plate 6090

The Duchess Solid Porcelain All Roll Rim Combination Lavatory and Dressing Table, supported on Three Porcelain Legs and Wall Clamps with Nickel-plated No. 10 Colonial Quick Opening Compression Faucets with China Handles marked "Hot" and "Cold," Reliance Waste with China Knob, Trap and Supply Pipes to wall.

Dimensions

Slab, inches.....	53 x 24
Bowl, inches.....	20 x 14 x 6½
Apron, inches.....	6¾

Prices

As described, Class A.....	89.00
As described, Class B.....	65.00

Plate 6091

The Duke Solid Porcelain All Roll Rim Lavatory, to tile in at wall, with Open Overflow, supported on Porcelain Legs, Nickel-plated Quick Opening Compression Combination Spout Supply Fixture with China Handles marked "Hot" and "Cold," Fulton Pop-up Waste with China Lever Handle, Trap and Supply Pipes to wall.

Dimensions

No.....	1	2
Slab, inches.....	42 x 24	48 x 25
Apron, inches.....	8	8
Bowl, inches.....	20 x 12 x 6½	20 x 12 x 6½

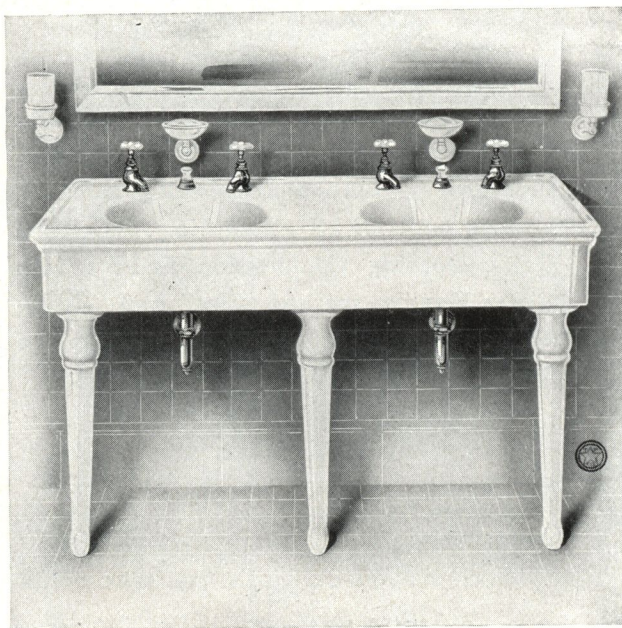
Prices

No.....	1	2
As described, Class A.....	86.00	100.00
As described, Class B.....	68.00	78.00



Duke. Plate 6091

Nason Porcelain Lavatories



Duo. Plate 6100

Plate 6100

The Duo Solid Porcelain All Roll Rim Double Bowl Lavatory, supported on Three Porcelain Legs and Wall Clamps, with Nickel-plated No. 10½ Compression Faucets with Solid China Handles marked "Hot" and "Cold," Reliance Wastes with China Knob, Traps and Supply Pipes to Wall.

Dimensions

Slab, inches.....	48 x 22
Bowls, inches.....	17 x 13 x 6½

Prices

As described, Class A.....	102.00
As described, Class B.....	79.00

Plate 6101

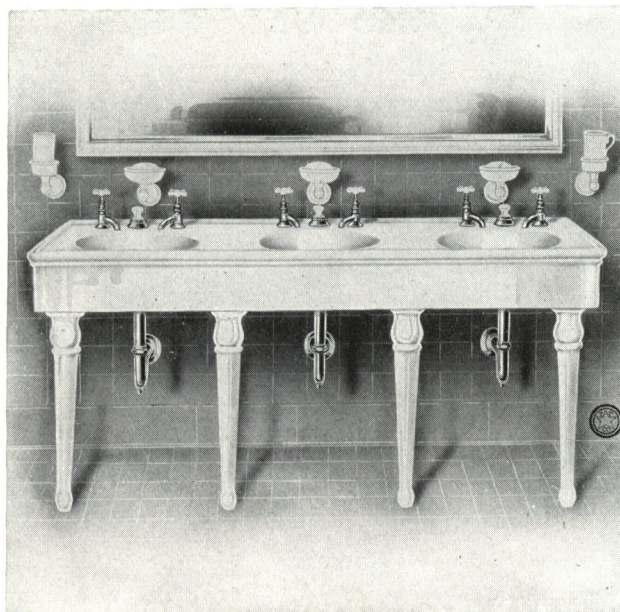
The Trio Solid Porcelain All Roll Rim Three Bowl Lavatory, supported on Four Porcelain Legs and Wall Clamps, with Nickel-plated No. 10½ Compression Faucets with Solid China Handles marked "Hot" and "Cold," Reliance Wastes with China Knob, Traps and Supply Pipes to wall.

Dimensions

Slab, inches.....	72 x 22
Apron, inches.....	8
Bowls, inches.....	17 x 13 x 6½

Prices

As described, Class A.....	150.00
As described, Class B.....	116.00



Trio. Plate 6101

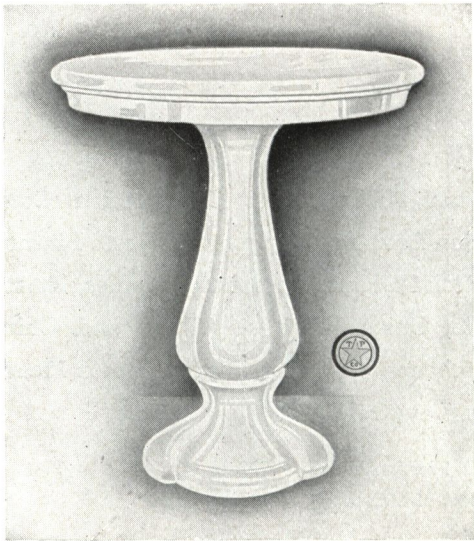


Plate 6110

Nason Solid Porcelain Dressing Table

Plate 6110

Nason Solid Porcelain Dressing Table on Ornamental Porcelain Pedestal and Concealed Connecting Rod.

Dimensions

Table Top, inches.....	26 x 16
Height from Floor to Top of Table, inches.....	30½

Prices

As described, Class A.....	22.00
As described, Class B.....	15.50

Nason Vitreous China Manicure Lavatory

Plate 6111

Nason Vitreous China Manicure Lavatory with Integral China Supply and Overflow, set on Single China Leg and Wall Supports, Nickel-plated Compression Combination Supply and Waste Fixture, with Pop-up Waste, Half S Trap to Wall, Supply Pipes with Loose Key Control Valves.

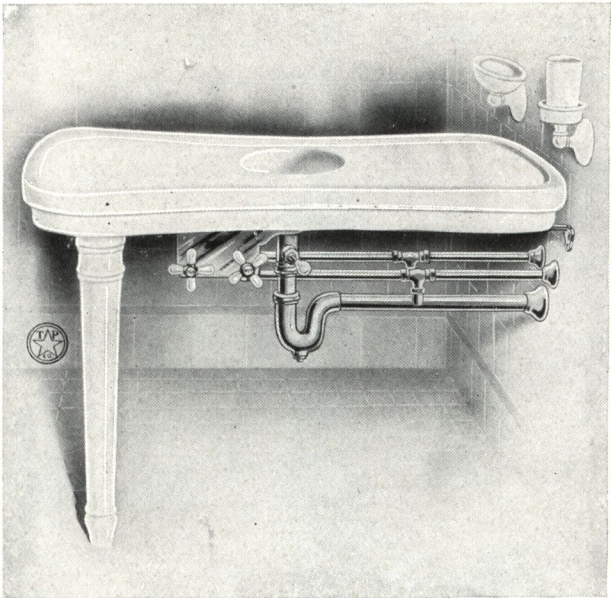


Plate 6111

Dimensions

Height from Floor, inches.....	29½
Length, inches.....	36
Width, inches.....	18
Size of Bowl, inches.....	6½

Price

Complete as described.....	73.00
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Lavatory Supply and Waste Fixtures

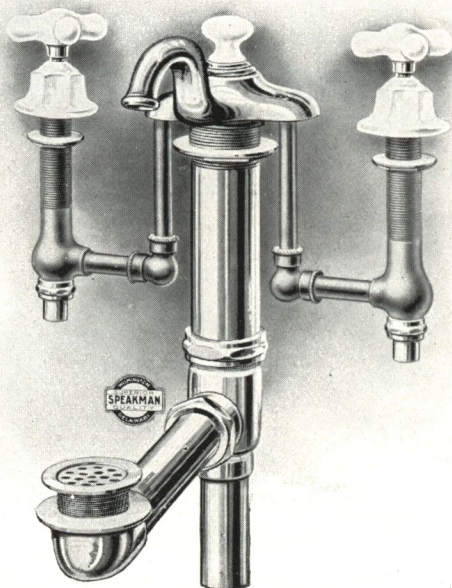


Plate 6120

Plate 6120

Nason Nickel-plated Compression Combination Lavatory Supply and Waste Fixture, with Solid China Cross Arm Handles, Raised Nozzle, China Knob on Waste and China Escutcheons, for Solid Porcelain and Heavy China Lavatories.

Tail Piece of Waste, $1\frac{1}{4}$ -inch O. D.
Inlets of Valves, $\frac{3}{8}$ -inch Iron Pipe.

Price as described 19.30

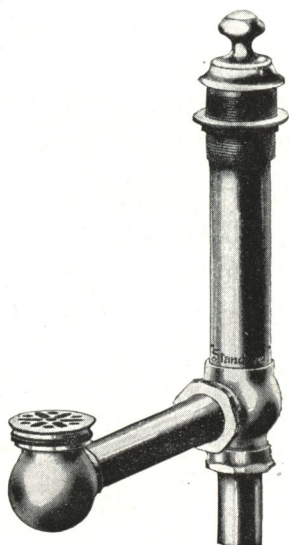


Plate 6121

Nickel-plated Reliance Lavatory Waste, with China Index Knob.

As described, each 4.00
Add for China Knob 1.00

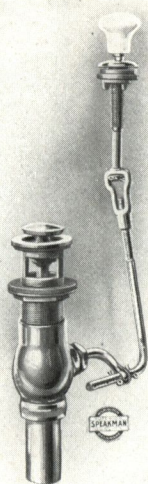


Plate 6122

Nickel-plated "Fulton" Pop-up Lavatory Waste with China Knob.

As described, each 5.00



Plate 6123

Nickel-plated St. George Pop-up Lavatory Waste with Friction Device and China Knob.

As described, each 5.00

Lavatory Supply and Waste Fixtures

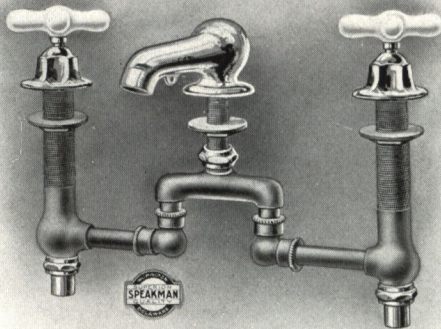


Plate 6130

Nickel-plated Compression Combination Supply Fixture, with Round Spout, Solid China Cross Arm Handles and Metal Escutcheons, for Solid Porcelain, Heavy China or Enameled Iron Lavatories, having Overflow and Plug in Basin.

As described, each..... 11.00

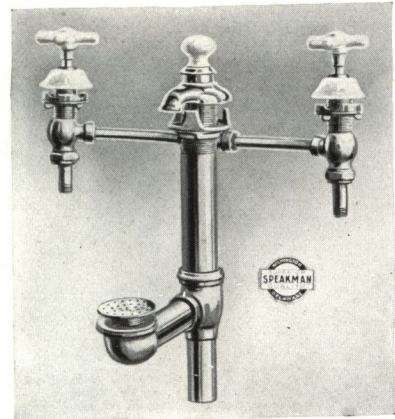


Plate 6131

Nickel-plated Compression Combination Lavatory Supply and Waste Fixture, with Solid China Cross Arm Handles, China Knob on Waste and China Escutcheons.

As described, each..... 12.00

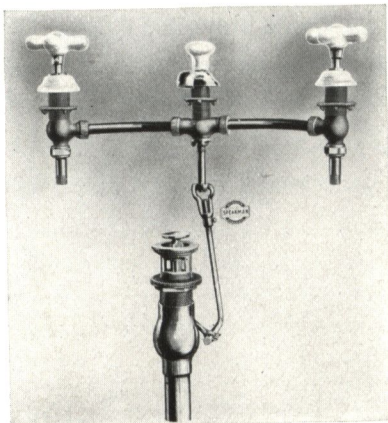


Plate 6132

Nickel-plated Compression Combination Lavatory Supply and Waste Fixture, with Fulton Pop-up Waste and China Knob, Solid China Cross Arm Handles and China Escutcheons.

As described, each..... 12.00

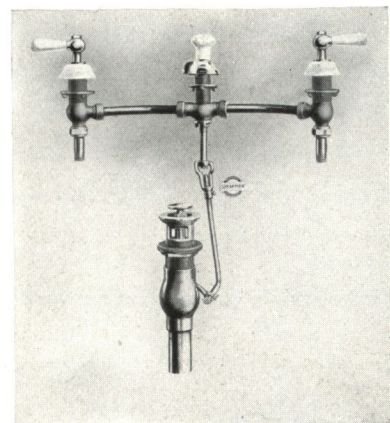


Plate 6133

Nickel-plated Quick Opening Compression Combination Lavatory Supply and Waste Fixture, with Fulton Pop-up Waste and China Knob, China Lever Handles on Valves and China Escutcheons.

As described, each..... 12.50

Nason Porcelain Lavatories

Assembly

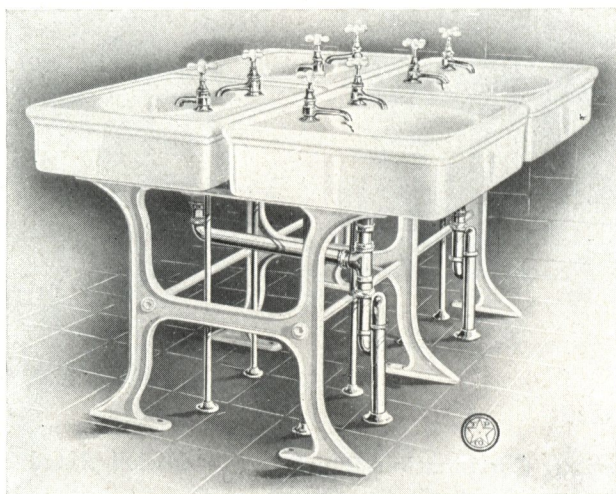


Plate 6140

The Assembly Solid Porcelain All Roll Rim Square Lavatories, set in Batteries and supported on Painted Iron Frames, Depressed Overflow, with Nickel-plated No. 10½ Compression Faucets with Solid China Handles marked "Hot" and "Cold," Overflow Grids, Chain Stays and Chains, Waste Plugs with Rubber Stoppers, Two-part Continuous Wastes and Full S Trap for each pair of Lavatories and Supply Pipes to Floor.

Dimensions

Size of Single Lavatory, inches.....	26 x 22
Size of Bowls, inches.....	17 x 13 x 6
Size over all Battery of Four Lavatories as shown, inches.....	53 x 46

Prices

Single Lavatory only, Class A.....	15.00
Single Lavatory only, Class B.....	8.75
White Painted Iron Frames for Four Lavatories as shown.....	20.00
White Painted Iron Frame for Additional pair Lavatories.....	6.75
No. 10½ Nickel-plated Compression Faucets as shown, per pair.....	4.50
Nickel-plated Brass Overflow Grid, Plug and Coupling, each.....	1.75
Nickel-plated Brass ¾-inch Supply Pipes to Floor, per pair.....	2.15
Nickel-plated Two-part Continuous Waste, for each pair of Lavatories.....	3.70
Nickel-plated 1½-inch Full S Trap to Floor, each.....	2.80

Nason Porcelain Lavatories

Squadron



Plate 6150

The Squadron Solid Porcelain Double Bowl Marine or Factory Lavatories, with Open Overflows, supported on Painted Iron Frame and Legs, with Special Nickel-plated Double Compression Faucets with China Index Handles, Brass Soap Cups with Spring Clamps, Waste Plug and Coupling.

Dimensions

Each Double Lavatory, inches.....	36 x 20
Each Bowl, inches.....	16 x 14 x 6½

Prices

Double Bowl Lavatory only, Class A.....	32.00
Double Bowl Lavatory only, Class B.....	22.50
Double Bowl Lavatory only, Buff Ware.....	22.00
Set of White Painted Iron Legs and Frame for Two Double Lavatories as shown.....	13.10
Nickel-plated Double Compression China Index Faucets for Hot and Cold Water, per pair.....	18.60
Nickel-plated Brass Soap Cups, Spring Clamp, each.....	5.20
Nickel-plated Plug and Coupling, each.....	2.10

Nason Porcelain Lavatories

Silk City

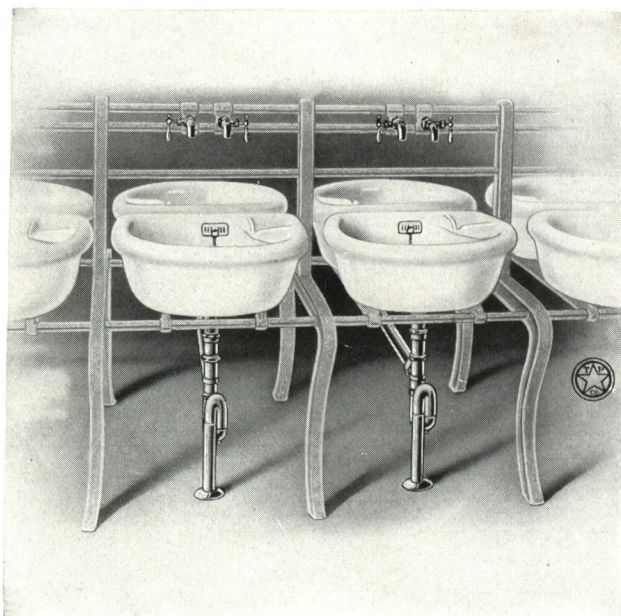


Plate 6160

The Silk City Solid Porcelain Factory Lavatories, with Integral Soap Cups and Overflows, set in Double Batteries, supported on Galvanized Iron Frame and Legs with Overhead Supports for Hot and Cold Water Supply Pipes, Nickel-plated Overflow Grids, Chain Stays and Chains, Waste Plugs and Couplings, Faucets and 1½-inch Two-part Continuous Waste and Full S Trap for each set of two Lavatories.

Dimensions

Each Lavatory along wall, inches.....	21
Each Lavatory from wall to front, inches.....	18
Each Lavatory inside, inches.....	17 x 15 x 6½

Prices

Basin only, Vitreous Porcelain.....	12.25
Basin only, White Porcelain, Class A.....	13.50
Basin only, White Porcelain, Class B.....	9.50
Basin only, Buff Porcelain.....	10.25
Special Single Hot and Cold Water Connections, per pair.....	1.90
Nickel-plated ½-inch Fuller Faucets, per pair.....	3.65
Nickel-plated P. O. Plug and Coupling, each.....	2.10
Nickel-plated 1½-inch Full S Trap to Floor, each.....	3.60
Nickel-plated Overflow Grid and Chain, each.....	.50
Nickel-plated 1½-inch Two-part Continuous Waste, each.....	7.50
Two Galvanized Iron Standards for Lavatories, set back to back.....	15.50
Galvanized Iron Standards for each additional set Lavatories.....	7.75

Nason Porcelain Lavatories

Fort Wood

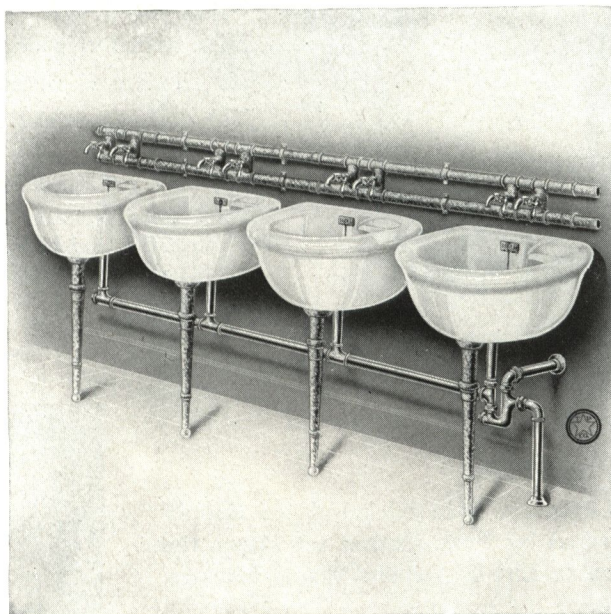


Plate 6170

The Fort Wood Solid Porcelain Barracks Roll Rim Lavatories, with Integral Soap Cups and Overflows, supported on Single Galvanized Iron Leg and Wall Clamp, with Nickel-plated Overflow Grid and Chain Stay, Chains, Waste Plug and Coupling, Fuller Pattern Faucets with Special Single Fittings for hot and cold water, 1½-inch Continuous Four-part Waste, with Full S Trap to Floor and Vent to wall.

Dimensions

Each Lavatory along wall, inches.....	21
Each Lavatory, wall to front, inches.....	18
Each Lavatory inside, inches.....	17 x 15 x 6½

Prices

Lavatory only, Vitreous Porcelain.....	12.25
Lavatory only, White Porcelain, Class A.....	13.50
Lavatory only, White Porcelain, Class B.....	9.90
Lavatory only, Buff Porcelain.....	10.50
Galvanized Iron Leg and Wall Brace, each.....	3.00
Special Single Hot and Cold Water Connection, per pair.....	2.00
Nickel-plated ½-inch Fuller Faucets, per pair.....	3.60
Nickel-plated Overflow Grid and Chain, each.....	.50
Nickel-plated 1½-inch Four-part Continuous Waste, each.....	14.50
Nickel-plated P. O. Plug and Coupling, each.....	2.10
Nickel-plated 1½-inch Full S Trap with Vent, each.....	4.65

Nason Prison Lavatories

Plate 6180

Heavy China Prison Lavatory, with Integral Spout and Waste Outlet to Wall, Soap Dish with Drain and Open Overflow, Nickel-plated Push Button, Self-closing Supply Valve and Special Bolts for securing to wall.

Dimensions

Width Over All, inches.....	14
Height Over All, inches.....	15 $\frac{1}{4}$
Front to Back, inches.....	13
As described.....	20.00

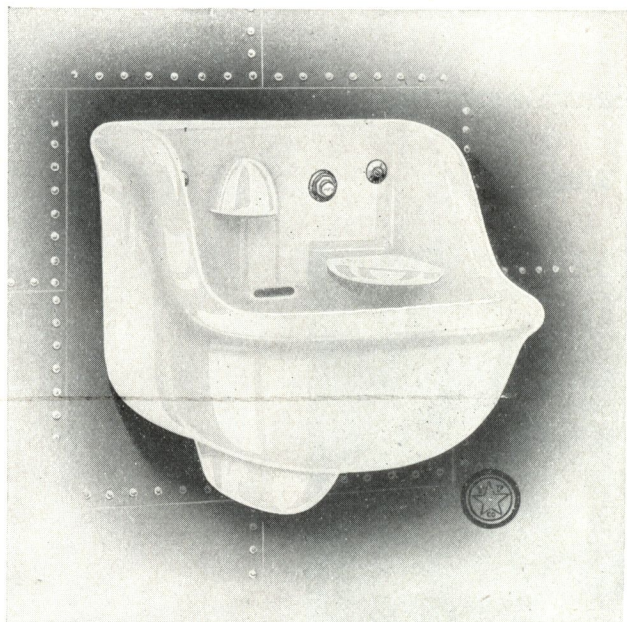


Plate 6180

Plate 6181

Solid Porcelain Prison Lavatory, with Nickel-plated Supply Nozzle through Back, operated by Push Button set above the Lavatory, Special Unremovable Lift Waste and Waste Fittings.

Dimensions

Over All, inches.....	13 x 15 $\frac{1}{2}$
Apron, inches.....	7
As described, Class A.....	28.25
As described, Class B.....	23.75

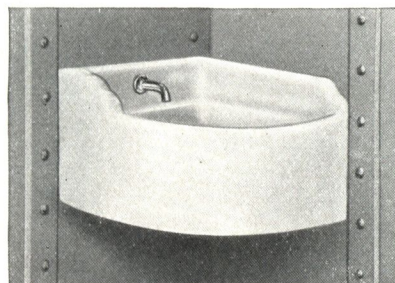


Plate 6181

Nason Dental Lavatory

Plate 6182

Heavy China Dental Lavatory with Integral Back and Flushing Rim, supported on Concealed Wall Hanger, with Special Nickel-plated Gooseneck Faucet with China Index, Connection for Flushing Rim, Outlet Plug and Trap to wall.

Dimensions

Width along wall, inches.....	12
Wall to front, inches.....	11
Height of back, inches.....	5
Bowl, inches.....	7 x 5 $\frac{1}{2}$ x 4
As described.....	16.50

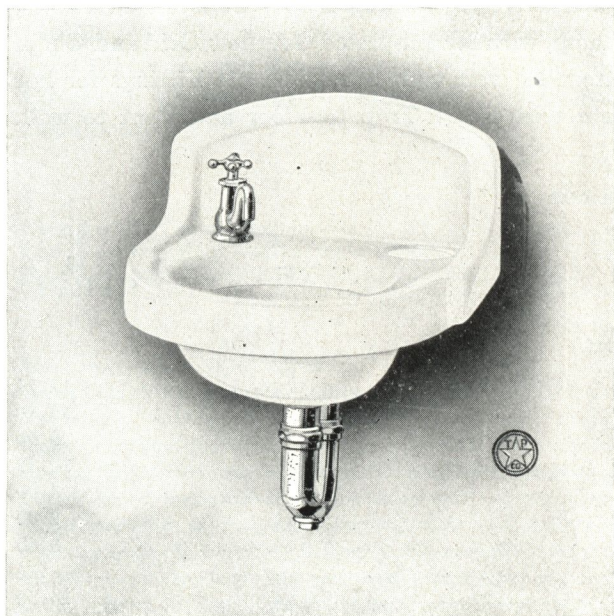


Plate 6182



Nason Porcelain Enameled Iron Lavatories

Plate 6190

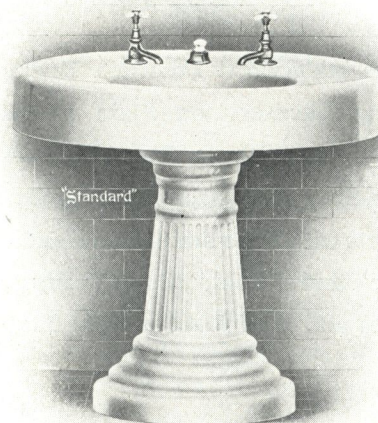
The Orville Porcelain Enameled Iron Lavatory on Square Panel Column Pedestal, with Nickel-plated Reliance Waste, with China Knob, No. 10½ Compression Faucets with Four-arm China Handles marked "Hot" and "Cold," Supply Pipes, Control Valves and Adjustable Trap to wall.

Orville. Plate 6190

Size, inches.....	33 x 24
Bowl, inches.....	18½ x 13¼
Price as described.....	73.00
Price less all Fittings, except Reliance Waste.....	62.00

Plate 6191

The Carlton Porcelain Enameled Iron Lavatory, on Fluted Pedestal, with Nickel-plated Reliance Waste with China Knob, No. 10½ Compression Faucets with Four-arm China Handles marked "Hot" and "Cold," Supply Pipes, Control Valves and Adjustable Trap to wall.



Carlton. Plate 6191

Size, inches.....	27 x 18	33 x 22
Bowl, inches.....	15 x 11	18 x 13
Price as described.....	49.00	55.00
Price less all Fittings, except Reliance Waste.....	36.50	43.00

Nason Porcelain Enameled Iron Lavatories



Plate 6200

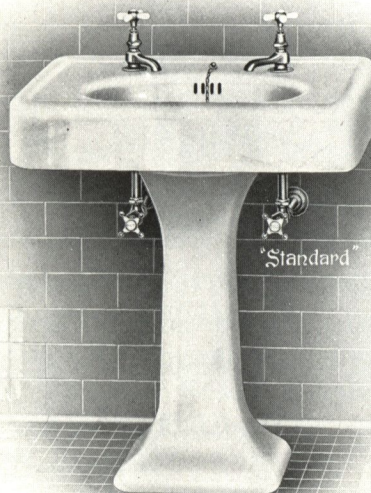
The Ridgewood Porcelain Enameled Iron Oblong Lavatory on Plain Pedestal, with Nickel-plated Reliance Waste with China Knob, No. 10 Colonial Quick Opening Compression Faucets with China Handles and Indexes, Supply Pipes, Control Valves and Half S Adjustable Trap to wall.

Ridgewood. Plate 6200

Size, inches.....	24 x 20	27 x 22	30 x 22
Bowl, inches.....	15 x 12	17 x 13	17 x 13
Price as described.....	40.00	43.25	46.50
Price, less all Fittings except Reliance Waste.....	26.50	30.00	33.50

Plate 6201

The Ridgewood Porcelain Enameled Iron Oblong Lavatory on Plain Pedestal, with Nickel-plated Waste Plug, Rubber Stopper, Chain Stay and Chain, No. 10½ Compression Faucets with Four-arm China Handles marked "Hot" and "Cold," Supply Pipes, Control Valves and Half S Adjustable Trap to wall.



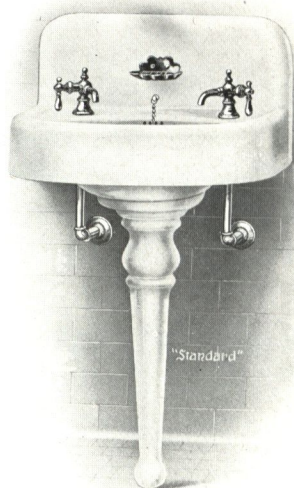
Ridgewood. Plate 6201

Size, inches.....	24 x 20	27 x 22	30 x 22
Bowl, inches.....	15 x 12	17 x 13	17 x 13
Price as described.....	34.50	38.00	41.50
Price less all Fittings.....	21.00	24.50	28.00

Nason Porcelain Enameled Iron Lavatories

Plate 6210

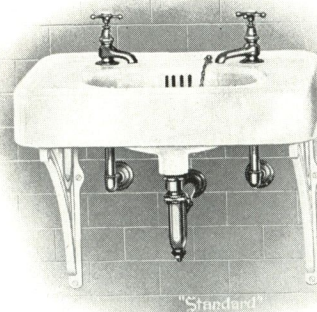
The Paterson Porcelain Enameled Iron One-piece Lavatory, supported on Pedestal Leg and Concealed Wall Hanger, with Nickel-plated Waste Plug, Rubber Stopper, Chain Stay and Chain, Soap Dish, No. 0 Fuller Faucets, Angle Supply Pipes and 1½-inch Half S Adjustable Trap to wall.



Paterson. Plate 6210

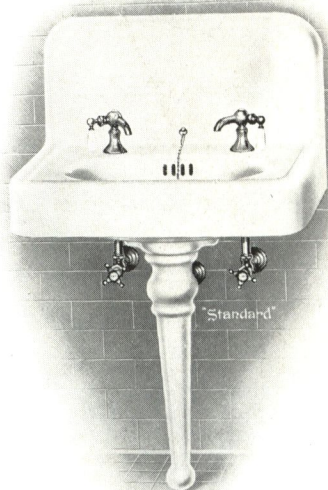
Plate 6211

The Passaic Porcelain Enameled Iron All Roll Rim Lavatory, on Enameled Brackets, with Nickel-plated Waste Plug, Rubber Stopper, Chain Stay and Chain, No. 7 Compression Faucets with China Index Handles, Supply Pipes and Trap.



Passaic. Plate 6211

Size, inches.....	24 x 18	24 x 20	26 x 20
Bowl, inches.....	15 x 12	15 x 12	15 x 12
Price as described.....	25.50	26.75	28.00
Price less all Fittings.....	16.50	17.75	19.00



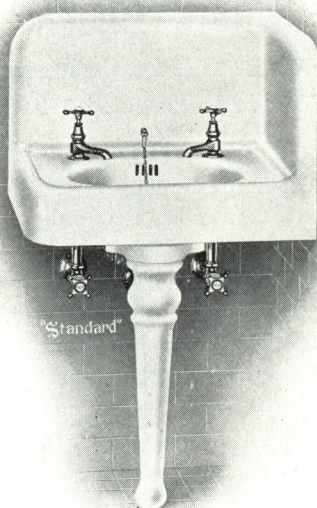
Ramsey. Plate 6212

Plate 6212

The Ramsey Porcelain Enameled Iron One-piece Lavatory supported on Pedestal Leg and Concealed Wall Hanger, with Nickel-plated Waste Plug, Rubber Stopper, Chain Stay and Chain, No. 10 Colonial Quick Opening Compression Faucets with China Handles and Indexes, Supply Pipes, Control Valves and Half S Trap.

Size, inches.....	24 x 18	24 x 20	27 x 22
Bowl, inches.....	16 x 11½	16 x 11½	18 x 12½
Back high, inches.....	10	12	12
Price as described.....	35.25	39.25	44.00
Price less all Fittings.....	22.25	26.25	30.00

Nason Porcelain Enameled Iron Lavatories



Norwood. Plate 6220

Plate 6220

The Norwood Porcelain Enameled Iron One-piece Corner Lavatory, with Right Hand End, supported on Pedestal Leg and Concealed Wall Hangers, with Nickel-plated Waste Plug, Rubber Stopper, Chain Stay and Chain, No. 7 Compression Faucets with China Index Handles, Supply Pipes, Control Valves and 1½-inch Half S Trap to wall.

Size, inches.....	24 x 18	24 x 20	27 x 22
Bowl, inches.....	15 x 12	15 x 12	15 x 12
Back high, inches.....	10	12	12
Price as described.....	38.25	42.50	47.75
Price less all Fittings.....	27.00	31.25	36.25

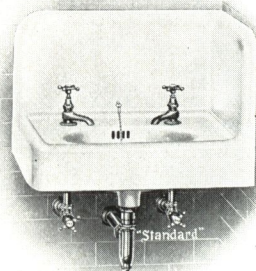
Lavatory for Left Hand Corner, same price.

Plate 6221

The Leonia Porcelain Enameled Iron One-piece Corner Lavatory, with Right Hand End, supported on Concealed Wall Hangers, with Nickel-plated Waste Plug, Rubber Stopper, Chain Stay and Chain, No. 7 Compression Faucets with China Index Handles, Supply Pipes, Control Valves and 1½-inch Half S Trap to wall.

Size, inches.....	24 x 18	24 x 20	27 x 22
Bowl, inches.....	15 x 12	15 x 12	15 x 12
Back high, inches.....	10	12	12
Price as described.....	30.75	34.50	44.00
Price less all Fittings.....	18.25	23.00	33.00

Lavatory for Left Hand Corner, same price.



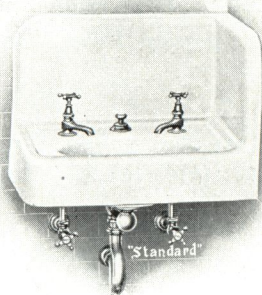
Leonia. Plate 6221

Plate 6222

The Leonia Porcelain Enameled Iron One-piece Corner Lavatory, with Right Hand End, supported on Concealed Wall Hangers, with Nickel-plated China Index Reliance Waste, No. 7 Compression Faucets with China Index Handles, Supply Pipes, Control Valves and 1½-inch Half S Trap to wall.

Sizes, inches.....	24 x 20	27 x 22
Bowl, inches.....	15 x 12	15 x 12
Back high, inches.....	12	12
Price as described.....	39.00	49.25
Price less all Fittings except Waste.....	28.50	38.25

Lavatory for Left Hand Corner, same price.



Leonia. Plate 6222

Nason Porcelain Enameled Iron Lavatories



Nyack. Plate 6230

Plate 6230

The Nyack Porcelain Enameled Iron One-piece Lavatory, supported on Concealed Wall Hanger, with Nickel-plated Waste Plug, Rubber Stopper, Chain Stay and Chain, No. 7 Compression Faucets with China Index Handles, Supply Pipes, Control Valves and Trap.

Sizes, inches.....	21 x 17	24 x 18	24 x 20	27 x 22
Bowl, inches.....	14½ x 10¼	16 x 11½	16 x 11½	18 x 12½
Back high, inches.....	9	10	12	12
Price as described.....	20.00	22.00	24.50	35.00
Price less all Fittings....	8.50	10.50	13.00	23.50

Plate 6231

The Westwood Porcelain Enameled Iron One-piece Lavatory, supported on Concealed Wall Hanger, with Nickel-plated Reliance Waste with China Index, No. 7 Compression Faucets with China Index Handles, Supply Pipes, Control Valves and Trap.

Sizes, inches.....	24 x 20	27 x 22
Bowl, inches.....	15 x 12	15 x 12
Back high, inches.....	12	12
Price as described.....	29.50	41.00
Price less all Fittings except Reliance Waste....	18.50	30.00



Westwood. Plate 6231

Plate 6232

The Oradell Porcelain Enameled Iron One-piece Lavatory, supported on Concealed Wall Hanger, with Nickel-plated Waste Plug, Rubber Stopper, Chain Stay and Chain, No. 7 Compression Faucets with China Index Handles, Supply Pipes, Control Valves and Trap.

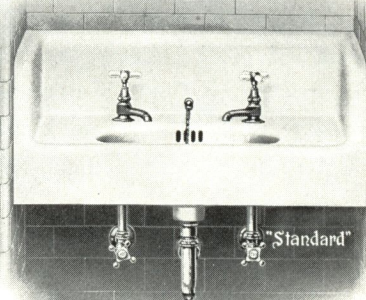


Oradell. Plate 6232

Size, inches.....	21 x 18
Bowl, inches.....	14½ x 10¼
Back high, inches.....	8
Price as described.....	19.50
Price less all Fittings.....	8.00

Nason Porcelain Enameled Iron Lavatories

Plate 6240



Ridgefield. Plate 6240

The Ridgefield Porcelain Enameled Iron One-piece Recess Lavatory, supported on Concealed Wall Hanger, with Nickel-plated Waste Plug, Rubber Stopper, Chain Stay and Chain, No. 10½ Compression Faucets with Four-arm China Handles Indexed, Supply Pipes, Control Valves and Trap.

Sizes, inches.....	24 x 18	26 x 20	31 x 21
Bowl, inches.....	15¼ x 10¾	15 x 12	17 x 13
Back high, inches.....	8	8	8
Price as described.....	35.75	37.50	43.50
Price less all Fittings.....	22.25	24.00	30.00

If with Reliance Waste, add 5.50.

Plate 6241

The Caldwell Porcelain Enameled Iron One-piece Corner Lavatory, supported on Concealed Wall Hangers, with Nickel-plated Waste Plug, Rubber Stopper, Chain Stay and Chain, Soap Cup, No. 10 Colonial Quick Opening Compression Faucets with China Handles and Indexes, Supply Pipes and Trap to wall.

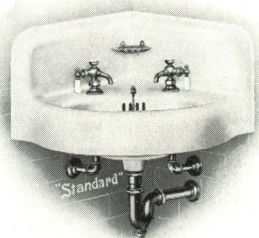
Size—length on sides, inches.....	20
Bowl, inches.....	15 x 11½
Back high, inches.....	10
Price as described.....	28.50
Price less all Fittings.....	18.00



Caldwell. Plate 6241

Plate 6242

The Summit Porcelain Enameled Iron One-piece Corner Lavatory, supported on Concealed Wall Hangers, with Nickel-plated Waste Plug, Rubber Stopper, Chain Stay and Chain, Soap Cup, No. 0 Fuller Faucets with China Handles and Indexes, Supply Pipes and Trap to wall.

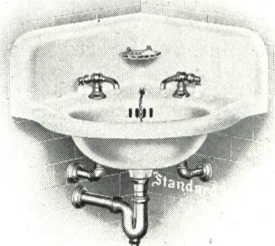


Summit. Plate 6242

Size—length on sides, inches.....	19
Bowl, inches.....	15 x 10½
Back high, inches.....	8
Price as described.....	21.50
Price less all Fittings.....	10.50

Nason Porcelain Enameled Iron Lavatories

Plate 6250



Devon. Plate 6250

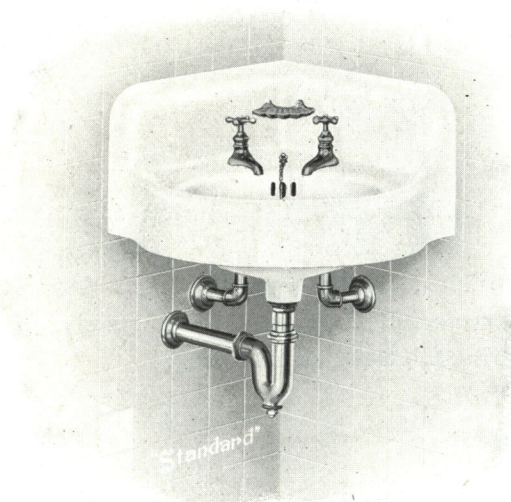
The Devon Porcelain Enameled Iron One-piece Corner Lavatory, supported on Concealed Wall Hangers, with Nickel-plated Waste Plug, Rubber Stopper, Chain Stay and Chain, Soap Cup, No. 0 Fuller Faucets with China Handles and Indexes, Supply Pipes and Half S Adjustable Trap.

Size—length on sides, inches.....	19
Bowl, inches.....	10½ x 14½
Back high, inches.....	8
Price as described.....	22.50
Price less all Fittings.....	11.50

Plate 6251

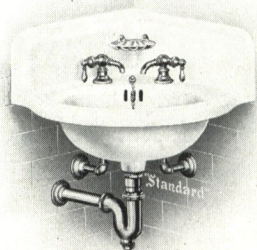
The Bogota Porcelain Enameled Iron One-piece Corner Lavatory with Apron, supported on Concealed Wall Hangers, with Nickel-plated Waste Plug, Rubber Stopper, Chain Stay and Chain, Soap Cup, No. 8 Compression Faucets with China Index Handles, Supply Pipes and 1½-inch Half S Adjustable Trap.

Size—length on sides, inches.....	16½
Bowl, inches.....	11 x 14
Back high, inches.....	6
Price as described.....	17.50
Price less all Fittings.....	9.00



Bogota. Plate 6251

Plate 6252



Midvale. Plate 6252

The Midvale Porcelain Enameled Iron One-piece Corner Lavatory, supported on Concealed Wall Hangers, with Nickel-plated Waste Plug, Rubber Stopper, Chain Stay and Chain, Soap Cup, No. 0 Fuller Faucets with Solid Handles, Supply Pipes and 1½-inch Half S Adjustable Trap.

Size—length on sides, inches.....	16½
Bowl, inches.....	11 x 14
Back high, inches.....	6
Price as described.....	16.25
Price less all Fittings.....	6.75

Nason Porcelain Enameled Iron Lavatories

Plate 6260



Closter. Plate 6260

The Closter Porcelain Enameled Iron One-piece Lavatory, supported on Concealed Wall Hanger, with Nickel-plated Waste Plug, Rubber Stopper, Chain Stay and Chain, No. 0 Fuller Faucets with Solid Handles, Soap Cup, Supply Pipes and 1½-inch Half S Adjustable Trap.

Size, inches.....	19 x 16
Bowl, inches.....	11 x 14
Back high, inches.....	6
Price as described.....	15.25
Price less all Fittings.....	5.50

Plate 6261

The Milo Porcelain Enameled Iron One-piece Lavatory, supported on Concealed Wall Hanger, with Nickel-plated Waste Plug, Rubber Stopper, Chain Stay and Chain, No. 0 Compression Faucets with Cross Handles, Supply Pipes and 1½-inch Half S Adjustable Trap.

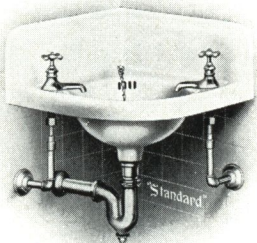
Size, inches.....	16 x 14
Bowl round, inches.....	11
Back high, inches.....	5
Price as described.....	13.50
Price less all Fittings.....	5.00



Milo. Plate 6261

Plate 6262

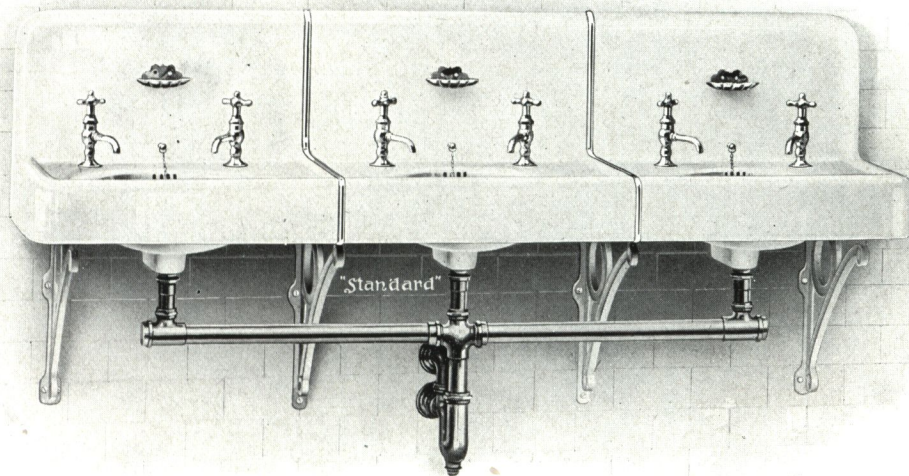
The Midget Porcelain Enameled Iron One-piece Corner Lavatory, supported on Concealed Wall Hangers, with Nickel-plated Waste Plug, Rubber Stopper, Chain Stay and Chain, No. 0 Compression Faucets with Cross Handles, Supply Pipes and 1½-inch Half S Adjustable Trap.



Midget. Plate 6262

Size—length on sides, inches.....	16
Bowl round, inches.....	11
Back high, inches.....	5
Price as described.....	14.25
Price less all Fittings.....	5.75

Nason Porcelain Enameled Iron Lavatories



Hudson. Plate 6270

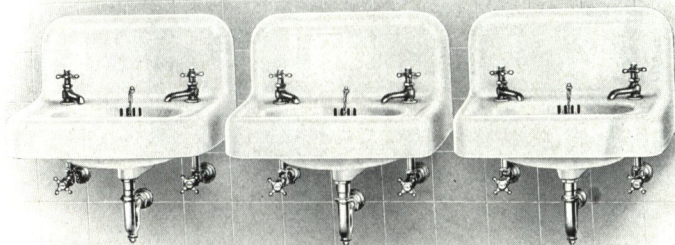
Plate 6270

The Hudson Porcelain Enameled Iron Lavatories in battery of three, each Lavatory in one piece with Nickel-plated Union Strip, supported on Porcelain Enameled Brackets, with Nickel-plated Waste Plugs, Rubber Stopper, Chain Stay and Chain, No. 1 Cross Handle Compression Faucets, 1½-inch Continuous Waste with Half S Vented Trap to wall.

Size each Lavatory, inches	20 x 16	24 x 18	24 x 20	27 x 22
Bowl, inches.....	14 x 11	15 x 12	15 x 12	15 x 12
Back high, inches.....	12	12	12	12
Price Three-Section Lavatory as described.....	97.00	105.50	120.75	132.25
Price each Additional Section as described.....	32.50	35.25	40.25	47.25
Price Three-Section Lavatory less all Fittings.....	71.50	80.00	95.25	116.75
Price each Additional Section less all Fittings.....	23.75	27.00	32.75	38.50

Plate 6271

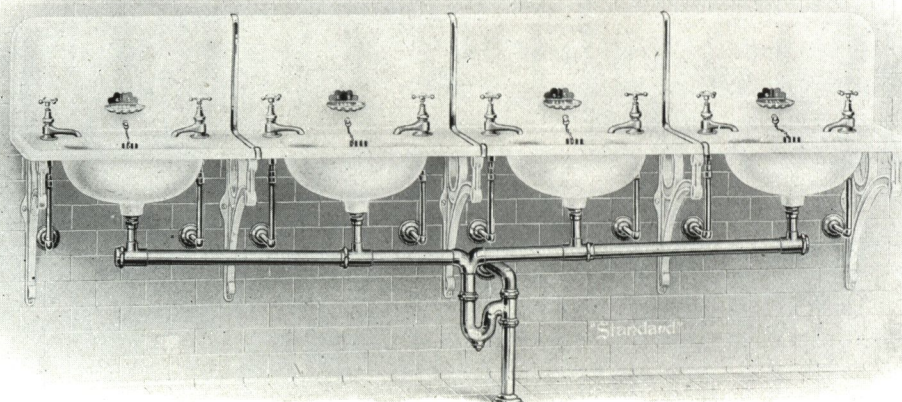
The Nyack Porcelain Enameled Iron One-piece Lavatories set in battery of three, supported on Concealed Wall Hangers, with Nickel-plated Waste Plugs, Rubber Stoppers, Chain Stays and Chains, No. 6 Peerless Self-closing Faucets with China Index Handles, Supply Pipes, Control Valves and 1½-inch Half S Traps to wall.



Nyack. Plate 6271

Size each Lavatory, inches	24 x 18	24 x 20
Bowl, inches.....	16 x 11½	16 x 11½
Back high, inches.....	10	12
Price Battery of Three Lavatories as described.....	74.50	82.00
Price each Additional Lavatory as described.....	24.75	27.25
Price Battery of Three Lavatories less all Fittings.....	31.50	38.25
Price each Additional Lavatory less all Fittings.....	10.50	13.00

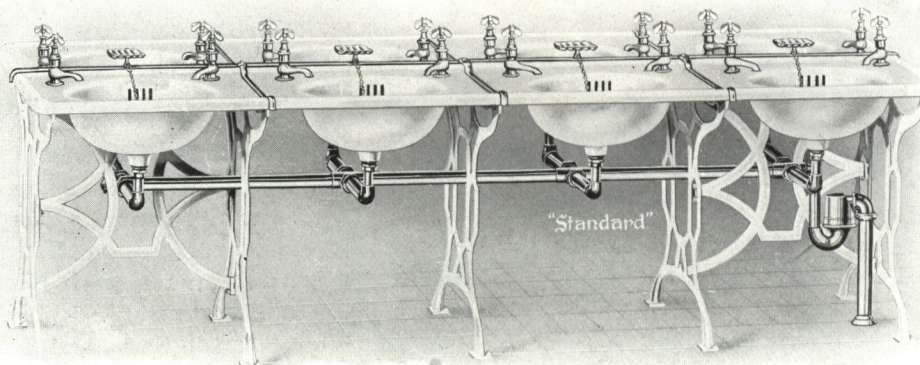
Nason Porcelain Enameled Iron Sectional Lavatories



Maywood. Plate 6280

The Maywood Porcelain Enameled Iron Four-section Lavatory, each Section in one piece, with Nickel-plated Union Strips, on Painted Iron Brackets and Concealed Wall Hangers, with Nickel-plated Soap Cups, Waste Plugs, Rubber Stoppers, Chain Stays and Chains, No. 7 Compression Faucets with China Index Handles, Supply Pipes and 1½-inch Continuous Waste with Full S Trap to floor and Vent to wall.

Size each Section, inches	20 x 16	24 x 18	24 x 20	27 x 22
Bowls, inches	14 x 11	15 x 12	15 x 12	15 x 12
Backs high, inches	12	12	12	12
Price Four-Section Lavatory as described	101.50	110.25	116.00	125.50
Price each Additional Section as described	25.25	27.50	29.00	42.25
Price Four-Section Lavatory less all Fittings	58.25	67.00	73.00	99.00
Price each Additional Section less all Fittings	14.50	16.75	18.25	24.75



Rutherford. Plate 6281

The Rutherford Porcelain Enameled Iron Four Double Section Lavatory, with Nickel-plated Union Strips and Painted Brackets to Floor, with Nickel-plated Soap Dishes, Waste Plugs, Rubber Stoppers, Chain Stays and Chains, Cross Handle Self-closing Faucets, 1½-inch Continuous Waste and 1½-inch Full S Non-syphoning Trap.

Size each Section, inches	20 x 16	24 x 18
Bowls, inches	14 x 11	15 x 12
Price Four Double Section Lavatory as described	203.75	227.00
Price each Additional Double Section as described	51.00	56.75
Price Four Double Section Lavatory less All Fittings	116.75	140.00
Price each Additional Double Section less all Fittings	29.25	35.00

Nason Porcelain Enameled Iron Wash Sink

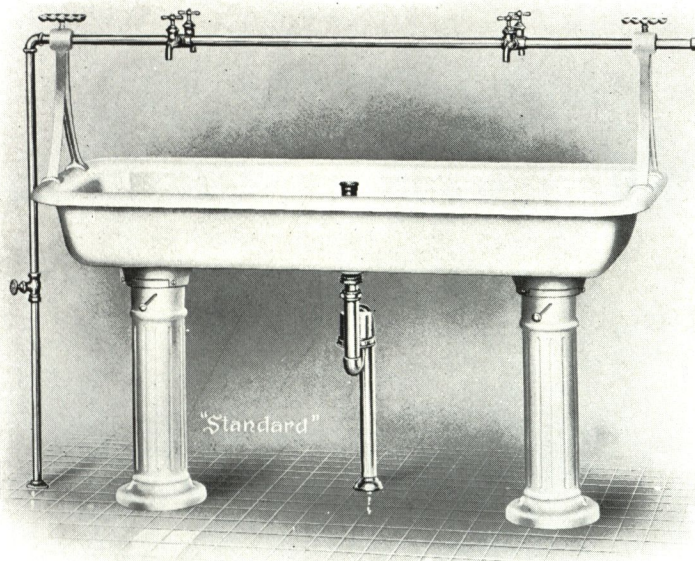


Plate 6290

Porcelain Enameled Iron Roll Rim Wash Sink with Painted Iron Standards and Pipe Supports, $\frac{3}{4}$ -inch Brass Supply Pipe over Center of Sink, Four Polished Brass Compression Faucets, Nickel-plated Standing Waste and Overflow, Two Soap Dishes and $1\frac{1}{2}$ -inch Anti-syphon Trap to Floor.

This Sink is designed to be used from both sides.

	Length Feet	18 Inches Wide	24 Inches Wide	27 Inches Wide
Price, less Bibbs, Trap and Stop.....	3	36.00	43.50	48.00
Price, less Bibbs, Trap and Stop.....	4	43.50	53.25	59.25
Price, less Bibbs, Trap and Stop.....	5	51.00	63.00	70.50
Add for Nickel-plated Compression Bibbs, each.....				1.50
Add for Rough Brass Stop, each.....				1.00
Add for $1\frac{1}{2}$ -inch Nickel-plated Anti-syphon Trap, each.....				8.50

Pipe to floor not included.

Sinks can be furnished to set 26 or 31 inches from floor to top of Rim. Specify height wanted. Can also be furnished with Hot Water Supply over Sink in addition to the Cold as shown. Prices on application.

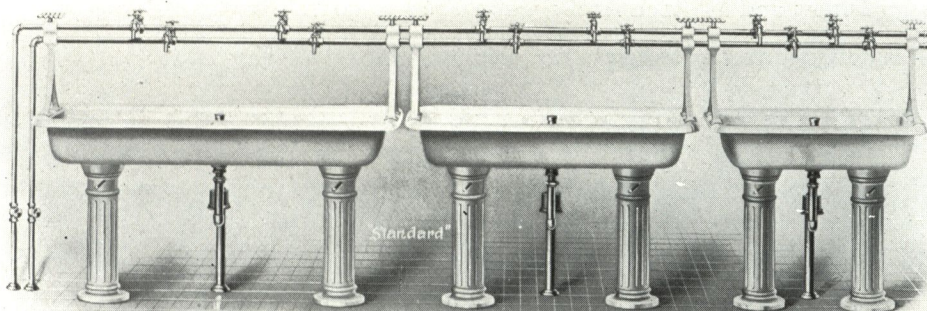


Plate 6290A

Plate 6290A shows the method of setting Plate 6290 Sink in Batteries with Hot and Cold Water Supplies if so desired. Above illustrates 5-foot, 4-foot and 3-foot sinks set in combination.

Nason Porcelain Enameled Iron Wash Sinks

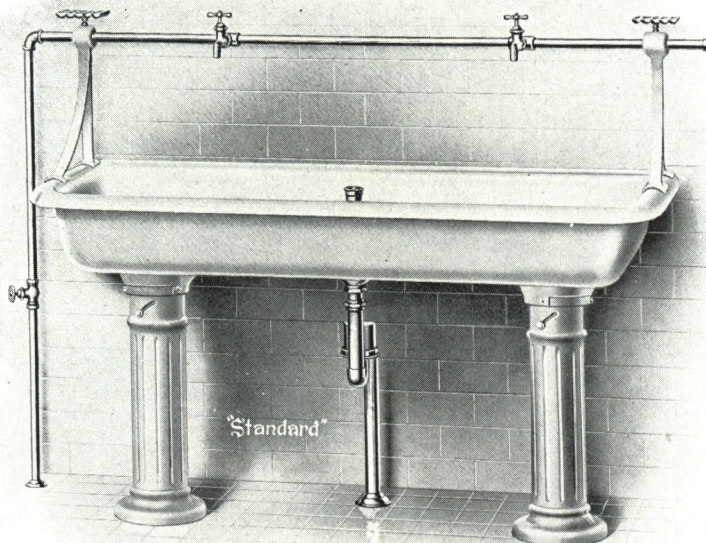


Plate 6300

Porcelain Enameled Iron Roll Rim Wash Sink, with Painted Iron Standards and Pipe Supports over Back of Sink, Two Polished Brass Compression Faucets, Nickel-plated Standing Waste and Overflow, Two Soap Dishes and 1½-inch Anti-syphon Trap to floor.

This Sink is designed to be used from one side only.

	Length Feet	18 Inches Wide	24 Inches Wide	27 Inches Wide
Price, less Bibbs, Trap and Stop.....	3	36.00	43.50	48.00
Price, less Bibbs, Trap and Stop.....	4	43.50	53.25	59.25
Price, less Bibbs, Trap and Stop.....	5	51.00	63.00	70.50
Add for Polished Brass Compression Faucets, each.....				1.00
Add for Rough Brass Stop, each.....				1.00
Add for 1½-inch Nickel-plated Anti-syphon Trap, each.....				8.50

Pipe to floor not included.

Sinks can be furnished to set 26 or 31 inches from floor to top of Rim. Specify height wanted.

Sinks can be furnished with Hot Water Supply in addition to Cold as shown. Prices on application.

Nason Porcelain Enameled Iron Wash Sink

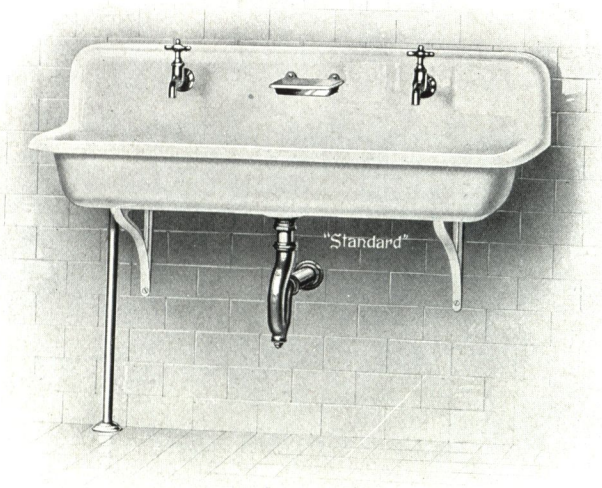


Plate 6310

Porcelain Enameled Iron Roll Rim Wash Sink, 18 inches wide with 8-inch Integral Back, supported on Concealed Wall Hangers and Painted Iron Brackets, fitted with Two Polished Brass Compression Flanged Faucets, Nickel-plated Standing Waste and Overflow, Soap Dish, Half S Trap to wall and 1/2-inch Galvanized Iron Supply Pipe.

Sizes, feet.....	3	4	5
Price Complete as described.....	35.25	42.50	49.75
Price, less Faucets, Supply Pipe and Trap.....	26.00	32.25	38.25

5-Foot Length

4-Foot Length

3-Foot Length

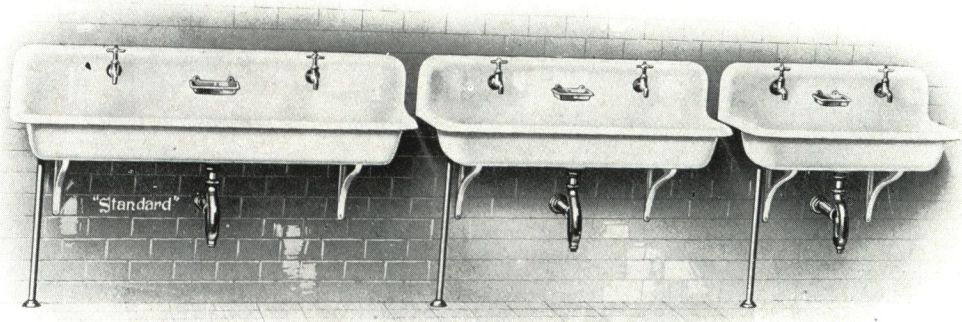


Plate 6310A

Plate 6310A shows the method of setting the above Wash Sinks in Batteries if so desired.

Nason Porcelain Enameled Iron Wash Sinks

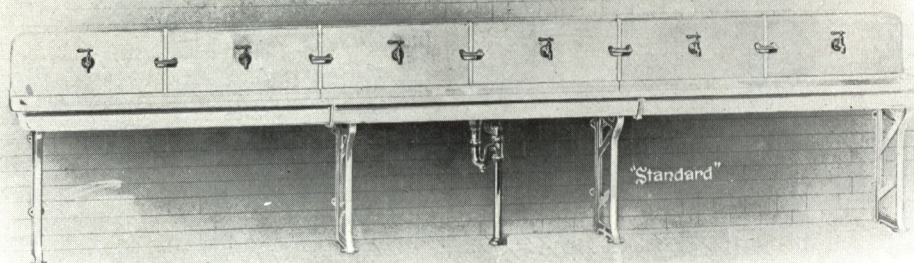


Plate 6320

Porcelain Enameled Iron Roll Rim Sectional Wash Sink, 18 inches wide, with Separate 12-inch High Back, set on Painted Iron Floor Brackets, fitted with Nickel-plated Standing Waste and Overflow, Soap Dishes, Fuller Pattern Flanged Faucets, and 1½-inch S Trap to floor with Vent to wall.

Sizes, feet.....	3	4	5	6	8	10	12
Sink as described, less Faucets and Trap.....	28.50	34.25	41.75	53.10	68.50	83.75	98.00
Sizes, feet.....	14	15	16	18	20	22	24
Sink as described, less Faucets and Trap.....	113.75	121.00	129.75	147.00	161.50	181.75	196.00
Sizes, feet.....			25	26	28	30	35
Sink as described, less Faucets and Trap.....			203.25	212.50	227.00	241.50	281.75
Add for Nickel-plated Fuller Faucets as shown, each.....							1.75
Add for 1½-inch Nickel-plated Vented S Trap as shown, each.....							6.50

Can be furnished in longer lengths. Prices on application.

Sinks from 26 to 35 feet long have two waste outlets.

Nason Porcelain Enameled Iron Wash Sinks

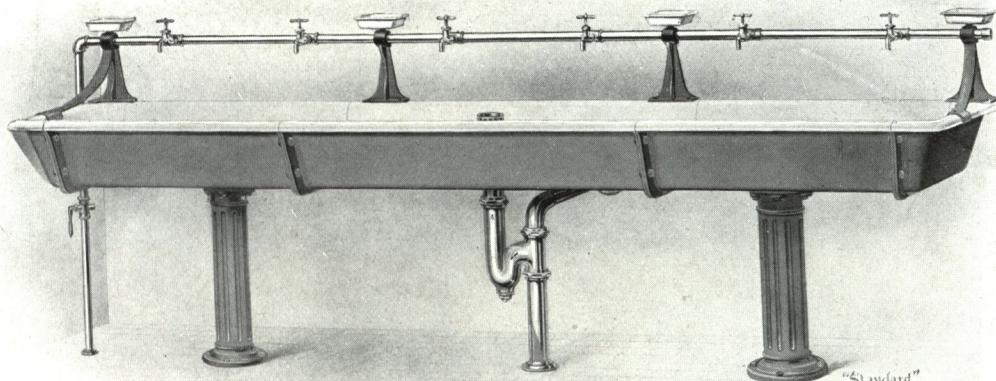


Plate 6330

Porcelain Enameled Iron Roll Rim Sectional Wash Sink with Painted Iron Standards and Pipe Supports over back of Sink, with $\frac{3}{4}$ -inch Brass Supply Pipe, $\frac{1}{2}$ -inch Compression Faucets, Nickel-plated Standing Waste and Overflow, Soap Dishes, and S Trap to Floor with Vent to Wall.

Pipe to floor not included.

Sink as Described, Less Faucets and Trap

Sizes, Feet	18 Inches Wide	24 Inches Wide	27 Inches Wide	Sizes, Feet	18 Inches Wide	24 Inches Wide	27 Inches Wide
3	42.00	49.50	54.00	17	167.25	210.75	236.25
4	49.50	59.25	65.25	18	179.75	220.50	245.50
5	57.00	69.20	76.50	19	183.00	231.00	259.50
6	65.25	79.50	88.50	20	192.00	246.75	276.75
7	75.75	92.25	102.75	21	205.00	258.00	289.50
8	83.25	106.50	125.15	22	207.00	267.75	300.15
9	91.50	121.50	135.00	23	225.75	279.25	312.75
10	99.00	131.25	141.25	24	234.00	288.00	324.75
11	118.50	143.25	160.50	25	241.50	297.80	336.00
12	126.00	153.75	174.35	26	249.75	308.60	348.00
13	133.50	163.50	183.00	27	257.25	323.25	363.10
14	141.00	175.25	193.60	28	266.00	335.25	377.30
15	149.25	183.75	206.25	29	283.50	336.10	386.30
16	157.50	193.75	218.25	30	291.75	359.25	405.00

Add for $\frac{1}{2}$ -inch Compression Faucets as shown, each..... 1.00
 Add for $1\frac{1}{2}$ -inch Nickel-plated Vented S Trap as shown, each..... 6.50

Sinks can be furnished to set 26 or 31 inches from floor to top of Rim. Specify height wanted.

Nason Porcelain Enameled Iron Wash Sinks

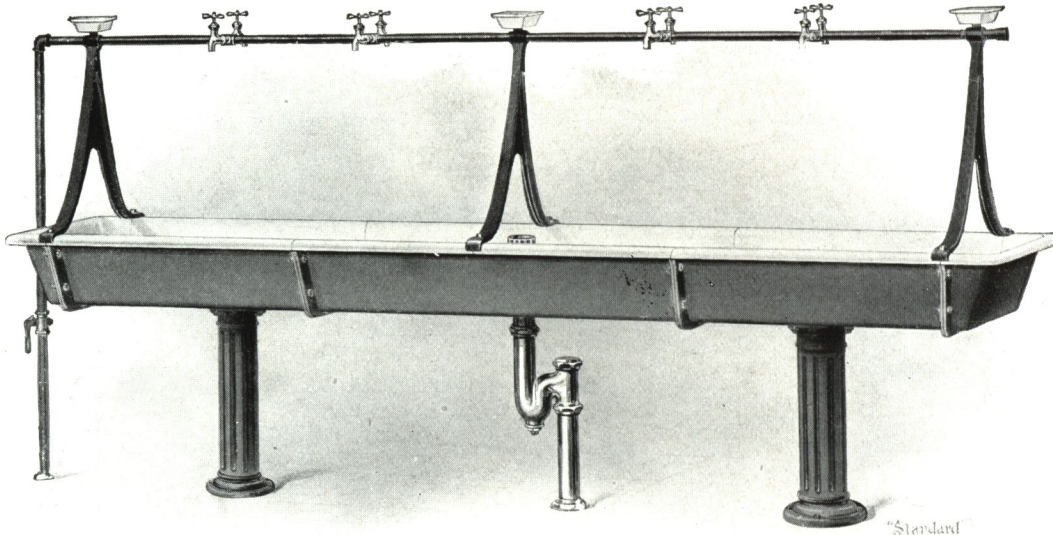


Plate 6340

Porcelain Enameled Iron Roll Rim Sectional Wash Sink, with Painted Iron Standards and Pipe Supports over Center of Sink, with $\frac{3}{4}$ -inch Brass Supply Pipe, $\frac{1}{2}$ -inch Compression Faucets, Nickel-plated Standing Waste and Overflow, Soap Dishes and S Trap to Floor.

Pipe to floor not included.

Sink as Described, Less Faucets and Trap

Sizes, Feet	18 Inches Wide	24 Inches Wide	27 Inches Wide	Sizes, Feet	18 Inches Wide	24 Inches Wide	27 Inches Wide
3	42.00	49.50	54.00	17	167.25	210.75	236.25
4	49.50	59.25	65.25	18	179.75	220.50	245.50
5	57.00	69.20	76.50	19	183.00	231.00	259.50
6	65.25	79.50	88.50	20	192.00	246.75	276.75
7	75.75	92.25	102.75	21	205.00	258.00	289.50
8	83.25	106.50	125.15	22	207.00	267.75	300.15
9	91.50	121.50	135.00	23	225.75	279.25	312.75
10	99.00	131.25	141.25	24	234.00	288.00	324.75
11	118.50	143.25	160.50	25	241.50	297.80	336.00
12	126.00	153.75	174.35	26	249.75	308.60	348.00
13	133.50	163.50	183.00	27	257.25	323.25	363.10
14	141.00	175.25	193.60	28	266.00	335.25	377.30
15	149.25	183.75	206.25	29	283.50	336.10	386.30
16	157.50	193.75	218.25	30	291.75	359.25	405.00

Add for $\frac{1}{2}$ -inch Compression Faucets as shown, each 1.00
 Add for $1\frac{1}{2}$ -inch Nickel-plated S Trap as shown, each 4.50

Sinks can be furnished to set 26 or 31 inches from floor to top of Rim. Specify height wanted.

Nason Porcelain Enameled Iron Wash Sinks

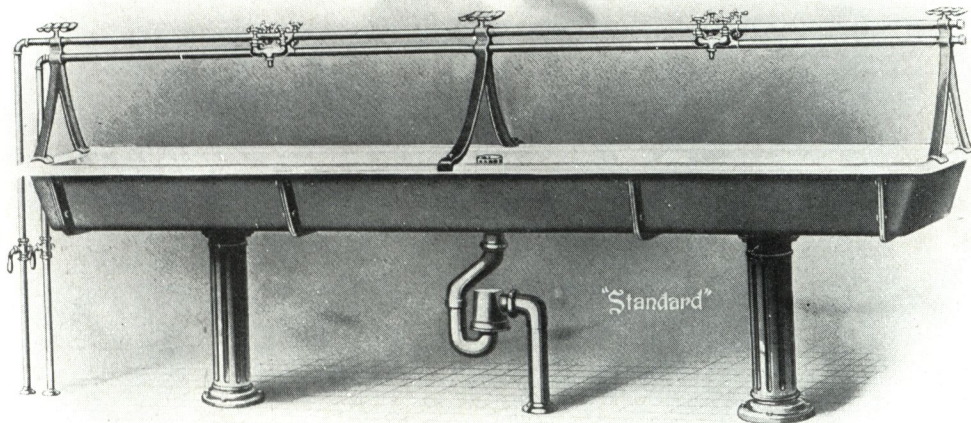


Plate 6350

Porcelain Enameled Iron Roll Rim Sectional Wash Sink with Painted Iron Standards and Double Pipe Supports over Center of Sink, with $\frac{3}{4}$ -inch Brass Supply Pipes for Hot and Cold Water, Nickel-plated Special Compression Combination Faucets with China Index Handles, Soap Dishes, Standing Waste and Overflow and $1\frac{1}{2}$ -inch Anti-syphon Trap to Floor.

Pipes and Stops to floor not included.

Sink as Described, Less Faucets and Trap

Sizes, Feet	18 Inches Wide	24 Inches Wide	27 Inches Wide	Sizes, Feet	18 Inches Wide	24 Inches Wide	27 Inches Wide
3	46.50	54.00	58.50	13	153.00	183.00	202.50
4	55.50	65.25	71.25	14	162.00	194.25	215.25
5	64.50	76.50	84.00	15	171.75	205.25	228.75
6	74.25	88.50	97.50	16	181.50	218.25	242.25
7	86.25	103.00	113.25	17	192.75	236.25	261.75
8	95.25	117.50	130.50	18	201.75	247.50	274.50
9	105.00	135.00	148.50	19	211.50	259.50	288.00
10	114.00	146.25	161.25	20	222.00	276.75	306.75
11	135.00	160.50	177.00	21	232.50	289.35	321.00
12	144.00	174.75	189.75	22	241.50	300.75	333.75

Add for Nickel-plated Special Sink Cock, with China Index Handles, each	4.50
Add for Double Supply Connection for $\frac{3}{4}$ -inch Pipes for use with Double Faucets, Rough Brass Nickered, each	4.80
Add for $1\frac{1}{2}$ -inch Nickel-plated Anti-Syphon Trap, each	9.00
Add for Rough Brass Stops, each	1.00
Add for $1\frac{1}{2}$ -inch Nickel-plated S Trap to floor, no Vent, each	4.75

Longer lengths can be furnished. Prices on application.

Sinks can be furnished to set 26 or 31 inches from floor to top of Rim. Specify height wanted.

Nason Factory Wash Sinks

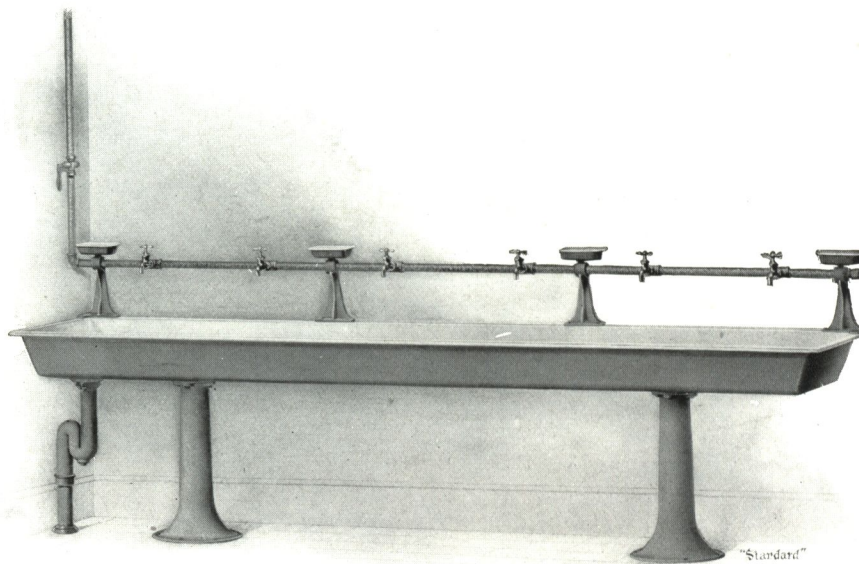


Plate 6360

Extra Heavy Iron Flat Rim Wash Sink with Painted Iron Standards and Pipe Supports over back of Sink, with $\frac{3}{4}$ -inch Galvanized Iron Supply Pipe, $\frac{1}{2}$ -inch Compression Faucets, Nickel-plated Standing Waste and Overflow, Soap Dishes and 2-inch Painted Iron S Trap.

Pipe to ceiling not included.

Enameled Inside as Described, Less Faucets and Stop

Sizes Length, Feet.....	4	5	6
20 Inches Wide.....	30.25	43.30	49.50
24 Inches Wide.....	33.70	39.50	56.50

Painted Inside as Described, Less Faucets and Stop

Sizes, Length, Feet.....	4	5	6	7	8	9	10
20 Inches Wide.....	23.00	28.50	31.00	.....	.....	.....	.....
24 Inches Wide.....	25.00	31.00	33.75	41.15	46.60	50.00	54.00

Add for $\frac{1}{2}$ -inch Finished Brass Compression Faucets, each..... 1.00

Add for $\frac{1}{2}$ -inch Rough Brass Stop, each..... 1.00

Sinks can be furnished with Hot Water Supply Pipe in addition to Cold as shown. Price on application.

Nason Factory Wash Sinks

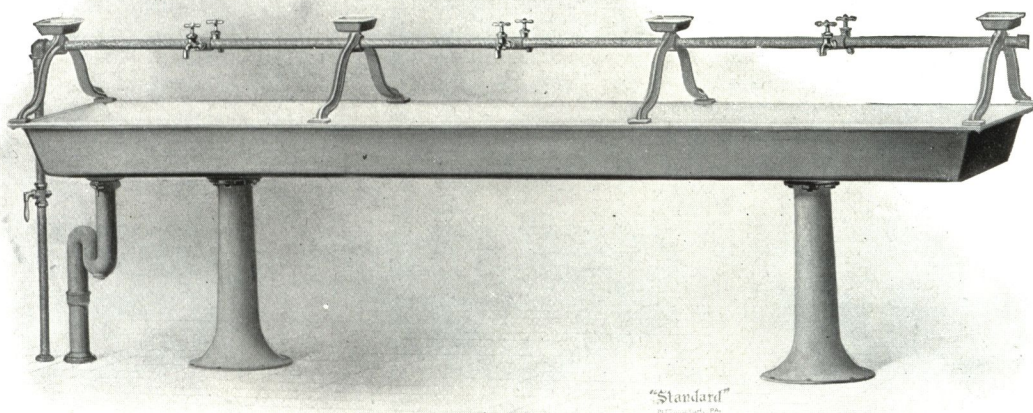


Plate 6370

Extra Heavy Iron Flat Rim Wash Sink, with Painted Iron Standards and Pipe Supports over Center of Sink, with $\frac{3}{4}$ -inch Galvanized Iron Supply Pipe, $\frac{1}{2}$ -inch Compression Faucets, Nickel-plated Standing Waste and Overflow, Soap Dishes and 2-inch Painted Iron S Trap.

Pipe to floor not included.

Width over Rim, 24 inches. Depth Inside, 6 inches

Sink as Described, Less Faucets and Stop

Sizes, Length, inches.....	48	60	72	84	96	108	120
Enameled Inside.....	33.70	49.50	56.50	.....	.....	.....	.....
Painted.....	25.00	31.00	33.75	41.15	46.60	50.00	54.00
Add for $\frac{1}{2}$ -inch Finished Brass Compression Faucets, each.....							1.00
Add for $\frac{1}{2}$ -inch Rough Brass Stop, each.....							1.00

Sinks can be furnished with Hot Water Supply Pipe in addition to Cold as shown. Price on application.

Vitreous China Basins

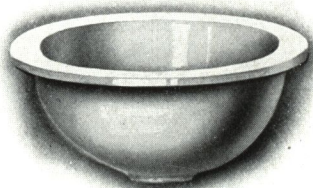


Plate 6380

Round No Overflow

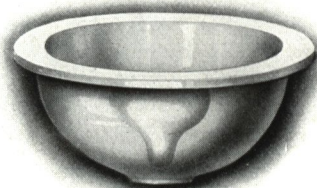


Plate 6381

Round Common Overflow

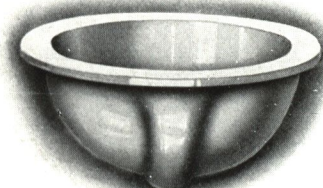


Plate 6382

Round Patent Overflow

Outside Diameter, inches.....	12	13	14	15	16
Plate 6380 Round No Overflow, each.....	1.00	1.00	1.00	1.50	2.00
Plate 6381 Round Common Overflow, each.....	1.00	1.00	1.00	1.50	2.00
Plate 6382 Round Patent Overflow, each.....	1.25	1.25	1.25	2.00	2.50

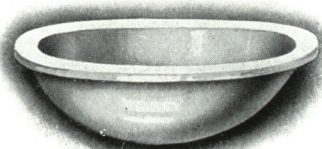


Plate 6383

Oval No Overflow



Plate 6384

Oval Common Overflow

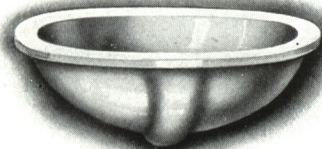


Plate 6385

Oval Patent Overflow

Size Outside, inches.....	14 x 17	15 x 19	16 x 21
Plate 6383 Oval No Overflow, each.....	2.50	3.50	4.50
Plate 6384 Oval Common Overflow, each.....	2.50	3.50	4.50
Plate 6385 Oval Patent Overflow, each.....	3.00	4.00	5.00

Porcelain Enameled Iron Bowls

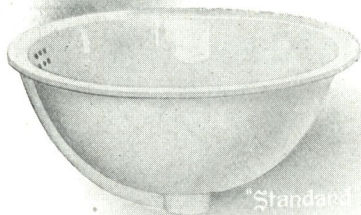


Plate 6386

Round Porcelain Enameled Iron Bowl
Painted White Outside

Outside Diameter, inches.....	12	14	16
Common Overflow, each.....	2.40	2.70	3.40
Patent Overflow, each.....	2.70	3.10	4.05
If Enameled All Over, add....	2.00	2.00	2.00

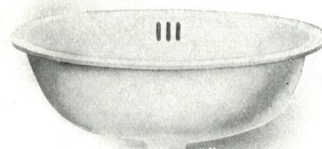


Plate 6387

Oval Porcelain Enameled Iron Bowl
Painted White Outside

Size Outside, inches.....	14 x 17	15 x 19
No Overflow, each.....	3.75	4.05
Patent Overflow, each.....	4.05	4.50
If Enameled All Over, add.....	2.00	2.00

Lavatory Supply Pipes

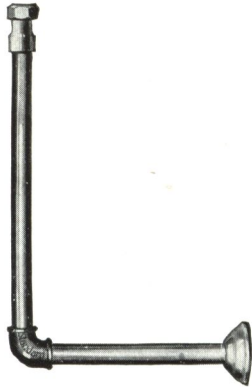


Plate 6390

Nickel-plated Lavatory Wall Supply Pipe, Iron Pipe Size, with Elbow and Escutcheon.

Size, inch.....	$\frac{3}{8}$	$\frac{1}{2}$
Per Pair.....	2.50	3.25

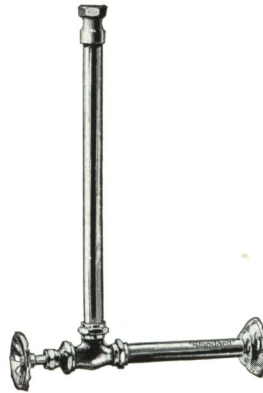


Plate 6391

Nickel-plated Lavatory Wall Supply Pipe, Iron Pipe Size, with Wheel Handle Compression Stop and Escutcheon.

Size, inch.....	$\frac{3}{8}$	$\frac{1}{2}$
Per Pair.....	4.50	5.75



Plate 6392

Nickel-plated Lavatory Wall Supply Pipe, Iron Pipe Size, with China Index Handle Compression Stop and Escutcheon.

Size, inch.....	$\frac{3}{8}$	$\frac{1}{2}$
Per Pair.....	5.00	6.25



Plate 6393

Nickel-plated Lavatory Floor Supply Pipe, Iron Pipe Size, with Escutcheon.

Size, inch.....	$\frac{3}{8}$	$\frac{1}{2}$
Per Pair.....	2.75	3.50



Plate 6394

Nickel-plated Lavatory Floor Supply Pipe, Iron Pipe Size, with Wheel Handle Compression Stop and Escutcheon.

Size, inch.....	$\frac{3}{8}$	$\frac{1}{2}$
Per Pair.....	4.75	6.00



Plate 6395

Nickel-plated Lavatory Floor Supply Pipe, Iron Pipe Size, with China Index Handle Compression Stop and Escutcheon.

Size, inch.....	$\frac{3}{8}$	$\frac{1}{2}$
Per Pair.....	5.25	6.50

Nason Porcelain Bath

Rector



Plate 6400

The Rector Solid Porcelain Bath for Tiling into Corner, Glazed In and Outside, with Concealed Compression Combination Over Rim Spout Supply Fitting, with Four-arm China Cross Handles and China Wall Escutcheons marked "Hot" and "Cold," China Lever Handle, Pop-up Waste with China Indicating Plates. Compression Two-valve Shower with China Cross Handles and 5-inch Adjustable Ball Joint Head, Nickel-plated Curtain Rail, Duck Curtain with Pins and Hold-back Chain.

Nominal Size, feet.....	4½	5	5½	6	6½
As described, Class A.....	180.00	188.00	196.00	218.00	248.00
As described, Class B.....	139.00	144.00	152.00	172.00	188.00
If less Shower, deduct.....					30.00

Width 30 inches. Height outside 21 inches. Depth inside 19 inches.

This Bath can be furnished for Right or Left Hand Corner.

Nason Porcelain Baths

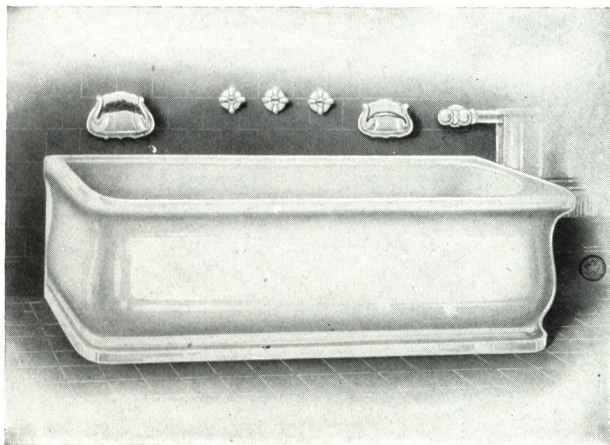


Plate 6410

The Lincoln Solid Porcelain Bath for Tiling into back wall and in floor, Glazed Inside, over Roll Rim and along Base and Finished Plain White Outside, with Compression Combination Bottom Bell Supply and Waste Fitting, with Four-arm Solid China Handles, Indexed on Valves and Waste, and China Wall Escutcheons.

Nominal Sizes, Length, feet	5	5½
As described, Class A.....	160.00	169.00
As described, Class B.....	113.00	119.00
If with White Enamel Finish Outside, add.....	12.50	12.50

Width 30 inches. Height outside 21 inches. Depth inside 19 inches.
Outlet is through back at center of Tub.

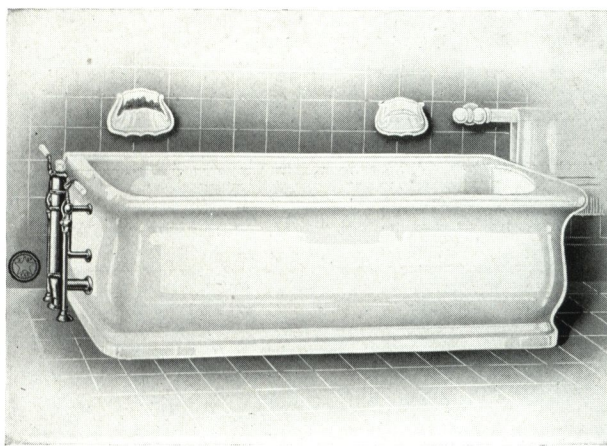


Plate 6411

The Grant Solid Porcelain Bath for Tiling into back wall and in floor, Glazed Inside, over Roll Rim and along Base and Finished Plain White Outside, with Nickel-plated Fuller Combination Bottom Bell Supply Fitting with China Index Handles, Reliance Waste with China Knob and ½-inch Supply Pipes.

Nominal Sizes, Length, feet	5	5½
As described, Class A.....	160.00	169.00
As described, Class B.....	113.00	119.00
If with White Enamel Finish Outside, add.....	12.50	12.50

Width 30 inches. Height outside 21 inches. Depth inside 19 inches.
This Bath can be furnished with Fitting and Waste at Right Hand End.

Nason Lightweight Porcelain Baths

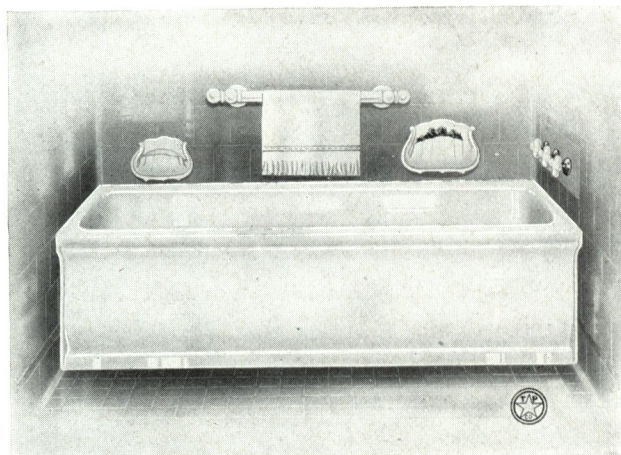


Plate 6420

The Saxon Lightweight Solid Porcelain Bath for Tiling into Recess, Glazed Inside and Outside, with Concealed Nickel-plated Compression Combination, Bottom Bell Supply and Waste Fitting with Solid China Cross Handles, Indexed on Valves and Waste.

Nominal Sizes, Length, feet.....	5	5½
As described, Class A.....	101.00	120.00
As described, Class B.....	80.00	87.00

Width 30 inches. Height outside 19 inches. Depth inside 17 inches.
This Bath can be furnished with Right or Left Hand End Outlet.

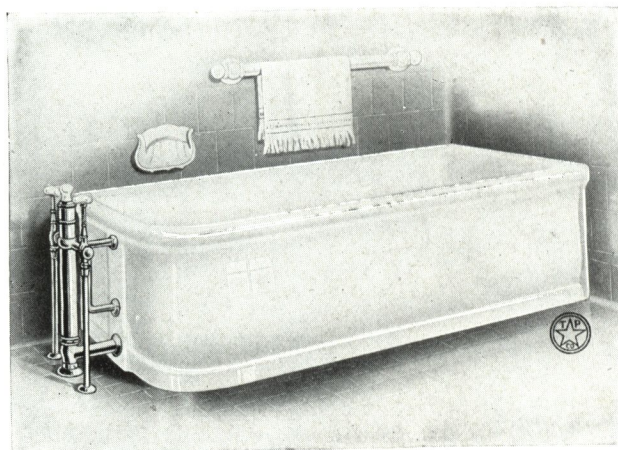


Plate 6421

The Dolphin Lightweight Solid Porcelain Bath for Tiling into Corner, Glazed Inside and Outside, with Nickel-plated Compression Combination Bottom Bell Supply Fitting, with Solid China Cross Handles Indexed, Reliance Waste with China Knob and ½-inch Supply Pipes.

Nominal Sizes, Length, feet.....	5	5½
As described, Class A.....	108.00	118.00
As described, Class B.....	85.00	94.00

Width 30 inches. Height outside 19 inches. Depth inside 17 inches.
This Bath can be furnished for Right or Left Hand Corner.

Nason Porcelain Baths

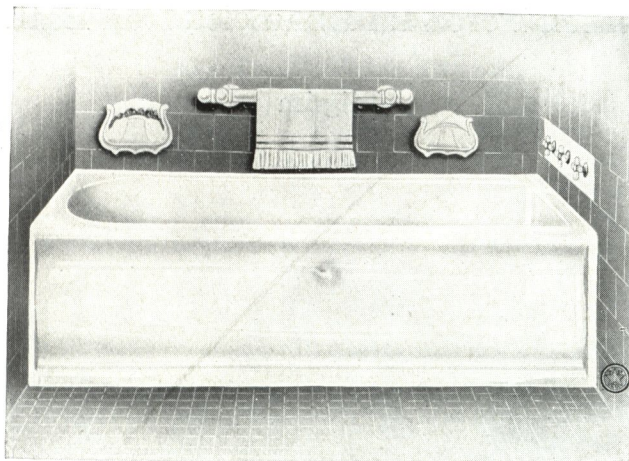


Plate 6430

The Rector Solid Porcelain Bath for Tiling into Recess, Glazed Inside and Outside, with Concealed Nickel-plated Compression Combination, Bottom Bell Supply and Waste Fitting, with Four-arm China Cross Handles, Indexed on Valves and Waste, and China Wall Escutcheons.

Nominal Sizes, Length, feet.	4½	5	5½	6	6½
As described, Class A.....	140.50	148.00	157.00	179.00	208.00
As described, Class B.....	100.00	107.00	110.00	129.00	150.00

Width 30 inches. Height outside 21 inches. Depth inside 19 inches.
This Bath can be furnished with Right or Left Hand End Outlet.

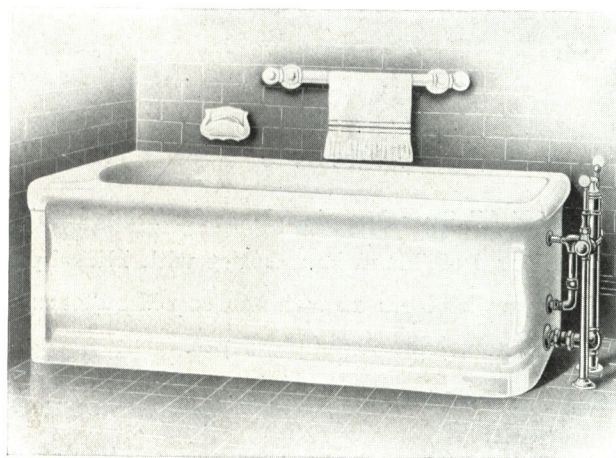


Plate 6431

The Rector Solid Porcelain Bath for Tiling into Corner, Glazed Inside and Outside, with Nickel-plated Fuller Combination Bottom Bell Supply Fitting with China Handles, Reliance Waste with China Knob and ½-inch Supply Pipes.

Nominal Sizes, Length, feet.	4½	5	5½	6	6½
As described, Class A.....	147.00	155.00	163.00	189.00	215.00
As described, Class B.....	106.00	111.00	119.00	139.00	156.00

Width 30 inches. Height outside 21 inches. Depth inside 19 inches.
This Bath can be furnished for Right or Left Hand Corner.

Nason Porcelain Enameled Iron Bath

Pilgrim

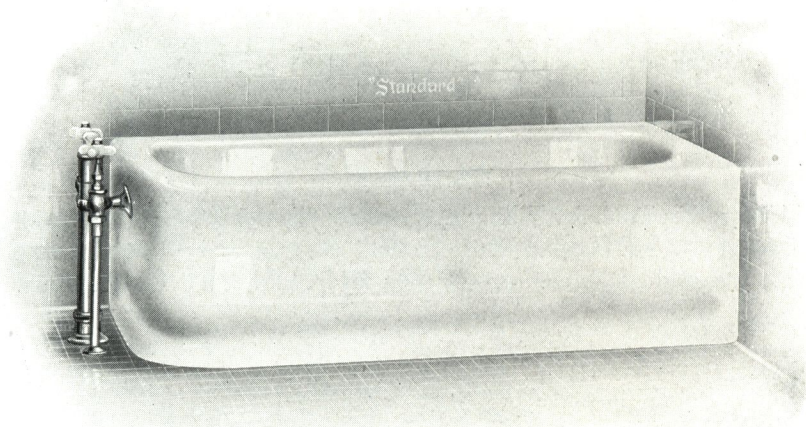


Plate 6440

The Pilgrim Porcelain Enameled All Over One-piece Bath for Tiling into Right Hand Corner, with $3\frac{3}{4}$ -inch Roll Rim extending to floor, Left Hand End Outlet with Nickel-plated Compression Combination Top Nozzle Supply Fixture with Four-arm China Cross Handles marked "Hot" and "Cold," and Reliance Waste with China Knob, $\frac{3}{4}$ -inch Supply Pipes.

Bottom Bell Supply Fitting furnished if desired.

Nominal Sizes, feet.....	4½	5	5½	6
Length Over All of Bath only, inches.....	54	60	66	72
Length Over All of Bath only from finished wall line, inches.....	53¼	59¼	65¼	71¼
Width Over All of Bath only, inches.....	30	30	30	30
Width Over All of Bath only from finished wall line, inches.....	29¼	29¼	29¼	29¼
Price as described.....	78.50	80.50	85.00	94.00

Height from floor to top of rim, 18 inches. Depth inside 17 inches.

This Bath can be furnished for Left Hand Corner with Right Hand End Outlet.

Nason Porcelain Enameled Iron Bath

Pilgrim

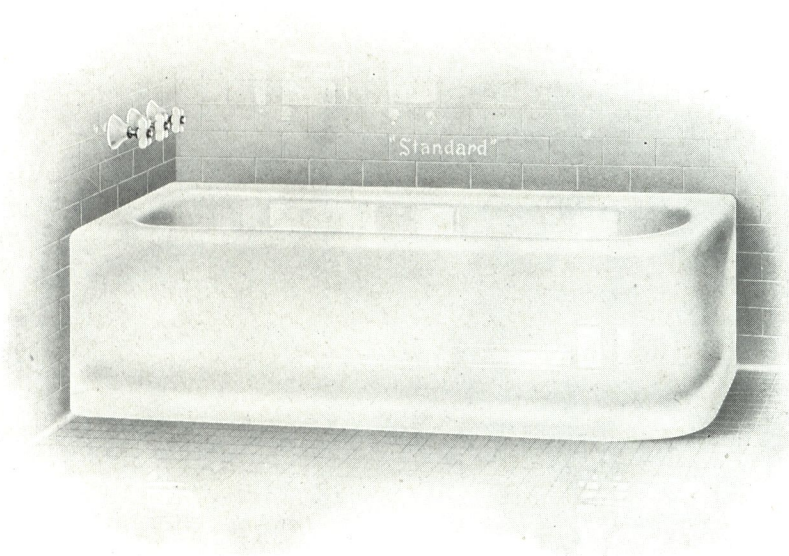


Plate 6450

The Pilgrim Porcelain Enameled All Over One-piece Bath for Tiling into Left Hand Corner, with $3\frac{3}{4}$ -inch Roll Rim extending to floor, Left Hand End Outlet, with Nickel-plated Compression Combination Concealed Supply and Waste Fitting with Top Nozzle Inlet, China Cross Handles and Wall Escutcheons on Supply Valves and Waste, $\frac{3}{4}$ -inch Supplies.

Bottom Bell Supply Fitting furnished if desired.

Nominal Sizes, feet.....	4½	5	5½	6
Length Over All of Bath only, inches.....	54	60	66	72
Length Over All of Bath only from finished wall line, inches.....	53¼	59¼	65¼	71¼
Width Over All of Bath only, inches.....	30	30	30	30
Width Over All of Bath only from finished wall line, inches.....	29¼	29¼	29¼	29¼
Price as described.....	75.25	78.00	82.25	90.00

Height from floor to top of Rim 18 inches. Depth inside 17 inches.

This Bath can be furnished for Right Hand Corner with Right Hand End Outlet.

Nason Porcelain Enameled Iron Bath

Pilgrim

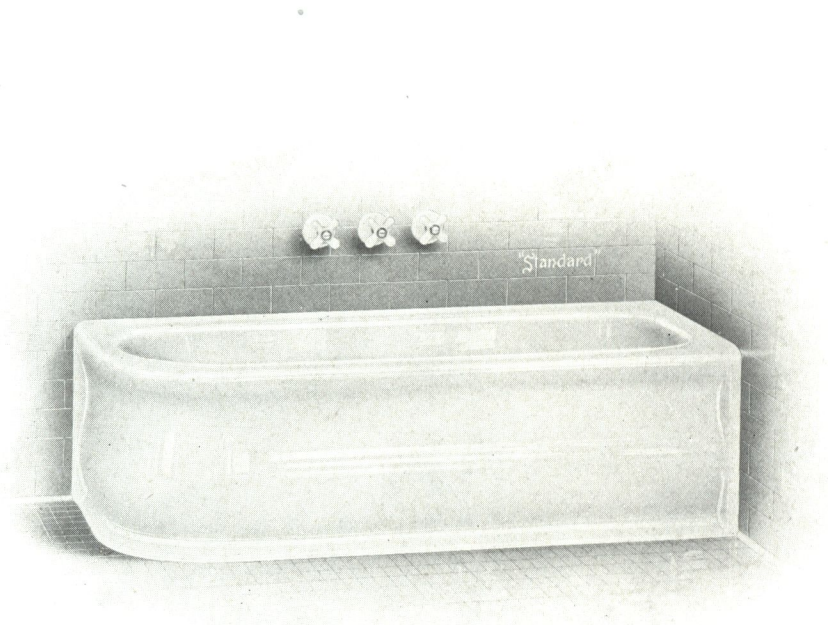


Plate 6460

The Pilgrim Porcelain Enameled All Over One-piece Bath for Tiling into Right Hand Corner, with 3¾-inch Roll Rim extending to floor, Right Hand End Outlet, with Nickel-plated Compression Combination Concealed Supply and Waste Fitting with Top Nozzle Inlet, China Cross Handles and Wall Escutcheons on Supply Valves and Waste, ¾-inch Supply Connections, Fitting through back wall. Bottom Bell Supply Fitting furnished if desired.

Nominal Sizes, feet.....	4½	5	5½	6
Length Over All of Bath only, inches.....	54	60	66	72
Length Over All of Bath only from finished wall line, inches.....	53¼	59¼	65¼	71¼
Width Over All of Bath only, inches.....	30	30	30	30
Width Over All of Bath only from finished wall line, inches.....	29¼	29¼	29¼	29¼
Price as described.....	77.25	80.00	84.25	92.00

Height from floor to top of Rim 18 inches. Depth inside 17 inches.
This Bath can be furnished for Left Hand Corner with Left Hand End Outlet.

Nason Porcelain Enameled Iron Bath

Pilgrim

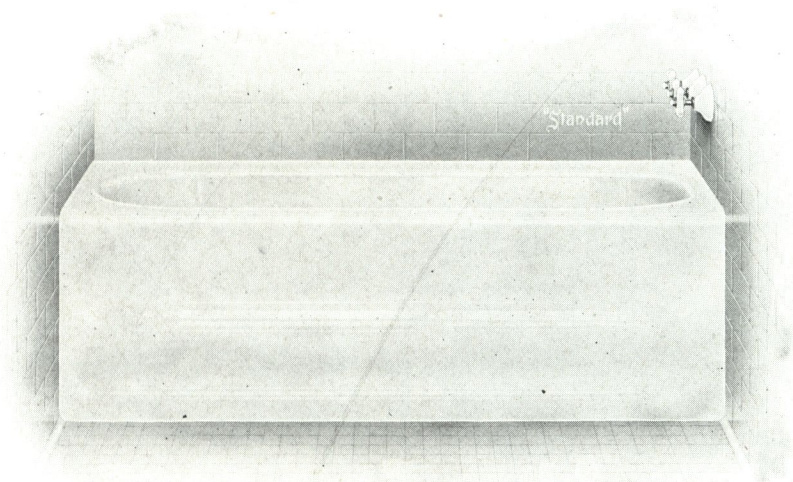


Plate 6470

The Pilgrim Porcelain Enameled All Over One-piece Bath for Tiling into Recess, with $3\frac{3}{4}$ -inch Roll Rim extending to floor, Right Hand End Outlet, with Nickel-plated Compression Combination Concealed Supply and Waste Fitting with Top Nozzle Inlet, China Cross Handles and Wall Escutcheons on Supply Valves and Waste, $\frac{3}{4}$ -inch Supplies.

Bottom Bell Supply Fitting furnished if desired.

Nominal Sizes, feet.....	4½	5	5½	6
Length Over All of Bath only, inches.....	52¾	58¾	64¾	70¾
Length Over All of Bath only from finished wall line, inches.....	51¼	57¼	63¼	69¼
Width Over All of Bath only, inches.....	30	30	30	30
Width Over All of Bath only from finished wall line, inches.....	29¼	29¼	29¼	29¼
Price as described.....	68.50	72.25	76.50	85.00

Height from floor to top of Rim 18 inches. Depth inside 17 inches.

This Bath can be furnished with Left Hand End Outlet.

Nason Porcelain Enameled Iron Bath

Pilgrim

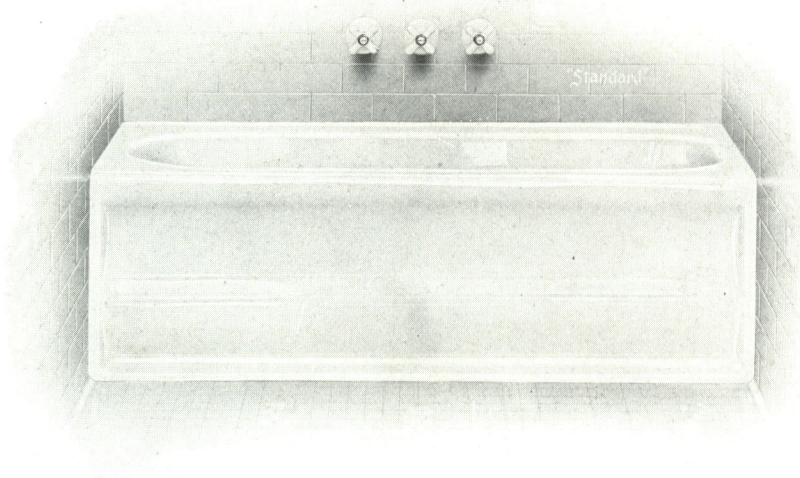


Plate 6480

The Pilgrim Porcelain Enameled All Over One-piece Bath for Tiling into Recess, with $3\frac{3}{4}$ -inch Roll Rim extending to floor, Right Hand End Outlet, with Nickel-plated Compression Combination Concealed Supply and Waste Fitting with Top Nozzle Supply Inlet, China Cross Handles and Wall Escutcheons on Supply Valves and Waste, $\frac{3}{4}$ -inch Supply Connections, fitting through back wall.

Bell Supply Fitting furnished if desired.

Nominal Sizes, feet.....	4½	5	5½	6
Length Over All of Bath only, inches.....	52¾	58¾	64¾	70¾
Length Over All of Bath only between finished wall lines, inches.....	51¼	57¼	63¼	69¼
Width Over All of Bath only, inches.....	30	30	30	30
Width Over All of Bath only from finished wall line, inches.....	29¼	29¼	29¼	29¼
Price as described.....	70.50	74.25	78.50	87.00

Height from floor to top of Rim 18 inches. Depth inside 17 inches.

This Bath can be furnished with Left Hand End Outlet.

Nason Porcelain Enameled Iron Bath

Tuxedo

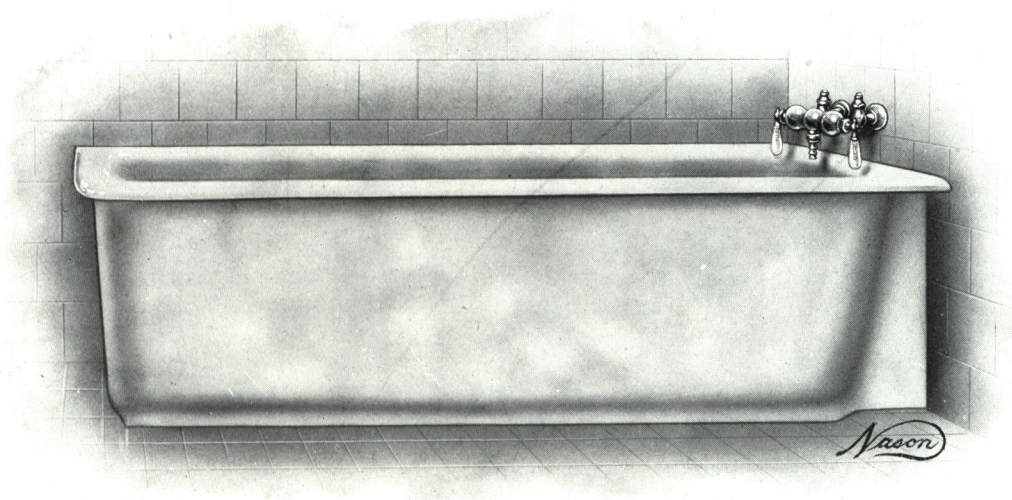


Plate 6490

The Tuxedo Porcelain Enameled Iron Bath with 3-inch Roll Rim, Plain Exterior, for Tiling into Right Hand Corner, with Right Hand End Outlet, with Nickel-plated No. 3600 Quatern Bath Cock, with China Side Handles marked "Hot" and "Cold," and Integral Compression Shut-offs in Shanks, Rough Brass Concealed Connected Waste and Overflow with Plug and Chain

Note: This Bath and Fitting are especially designed for use where a tiled-in tub is desired, but where it is impossible to have the customary shaft behind the wall for concealed fittings. The Over Rim Quatern Bath Cock with Integral Shut-offs in Shanks and all working parts exposed makes this possible, as nothing is concealed behind the wall but the supply pipes.

Nominal Sizes, feet.....	4½	5	5½
Length Over All of Bath only, inches.....	54½	60½	66½
Length Over All of Bath only from finished wall line, inches.....	54	60	66
Width Over All of Bath only, inches.....	29	29	29
Width Over All of Bath only from finished wall line, inches.....	28½	28½	28½
Price as described.....	51.00	52.00	57.00

For Zinc White Exterior Finish, add: No. 1, 15.50; No. 2, 12.50; Albadent, 7.50.

Height from bottom of Bath to top of Rim 18 inches. Height from floor to top of Rim 17½ inches. Depth inside 17 inches.

This Bath can be furnished for Left Hand Corner and also for Recess.

Nason Porcelain Enameled Iron Bath

Tuxedo

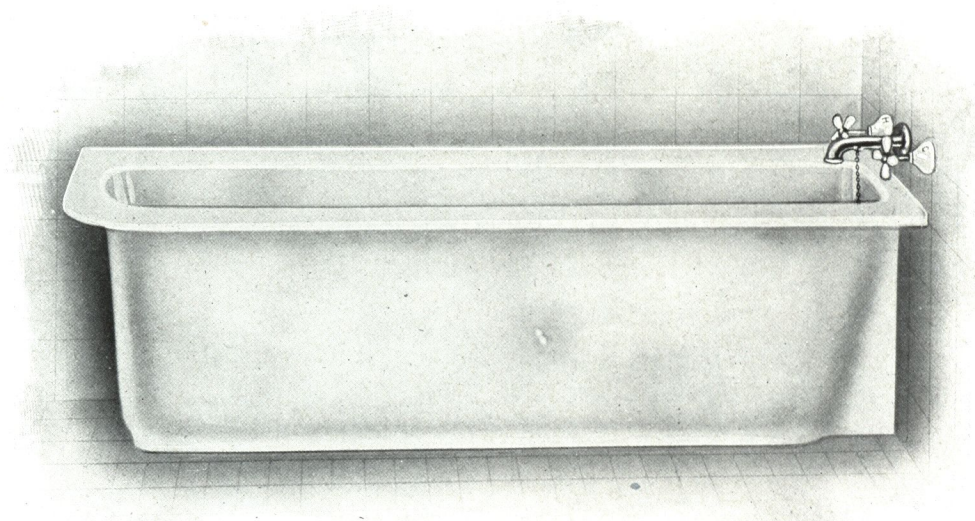


Plate 6500

The Tuxedo Porcelain Enameled Iron Bath with 3-inch Roll Rim, Plain Exterior, for Tiling into Right Hand Corner with Right Hand End Outlet, Concealed Compression Combination Over Rim Spout Supply Fitting with Four-arm China Cross Handles and China Wall Escutcheons marked "Hot" and "Cold," Concealed Connected Waste and Overflow with Rubber Stopper and Chain.

Nominal Sizes, feet.....	4½	5	5½
Length Over All of Bath only, inches.....	54½	60½	66½
Length Over All of Bath only from finished wall line, inches.....	54	60	66
Width Over All of Bath only, inches.....	29	29	29
Width Over All of Bath only from finished wall line, inches.....	28½	28½	28½
Price as described.....	56.60	58.60	63.75

For Zinc White Exterior Finish, add: No. 1, 15.50; No. 2, 12.50; Albadent, 7.50.

Height from bottom of Bath to top of Rim 18 inches. Height from floor to top of Rim 17½ inches. Depth inside 17 inches.

This Bath can be furnished for Left Hand Corner.

Nason Porcelain Enameled Iron Baths

Plate 6510

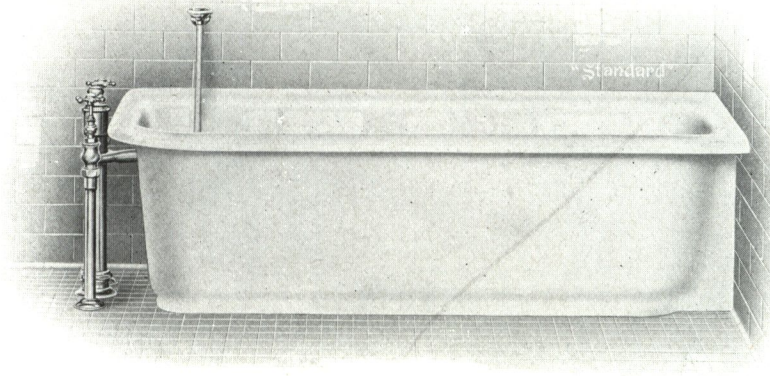


Plate 6510

The Tuxedo Porcelain Enameled Iron Bath, with 3-inch Roll Rim, Plain Exterior, Left Hand End Outlet, for Tiling into Right Hand Corner, with Nickel-plated Compression Combination Top Nozzle Supply Fitting with Six Ball China Index Handles, Reliance Waste with China Index, $\frac{1}{2}$ -inch Supply Pipes, Rubber Hose and Sprinkler.

Nominal Sizes, feet.....	4 $\frac{1}{2}$	5	5 $\frac{1}{2}$
Length Over All of Bath only, inches.....	54 $\frac{1}{2}$	60 $\frac{1}{2}$	66 $\frac{1}{2}$
Length Over All of Bath only from finished wall line, inches.....	54	60	66
Width Over All of Bath only, inches.....	29	29	29
Width Over All of Bath only from finished wall line, inches.....	28 $\frac{1}{2}$	28 $\frac{1}{2}$	28 $\frac{1}{2}$
Price as described.....	68.00	70.00	75.00

For Zinc White Exterior Finish, add: No. 1, 15.50; No. 2, 12.50; Albadent, 7.50.

Height from bottom of Bath to top of Rim 18 inches. Height from floor to top of Rim 17 $\frac{1}{2}$ inches. Depth inside 17 inches.

This Bath can be furnished with Right Hand End Outlet to tile into Left Hand Corner.

Plate 6511

The Tuxedo Porcelain Enameled Iron Bath, with 3-inch Roll Rim, Plain Exterior, Right Hand End Outlet, for Tiling into Right Hand Corner, with Nickel-plated Compression Combination Concealed Supply and Waste Fitting with Bottom Bell Inlet, $\frac{1}{2}$ -inch Supply Pipes, China Cross Handles with Indexes on Supply Valves and Waste.

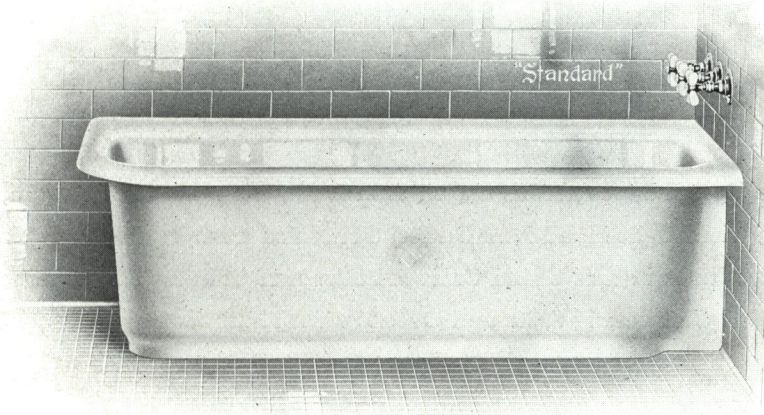


Plate 6511

Nominal Sizes, feet.....	4 $\frac{1}{2}$	5	5 $\frac{1}{2}$
Length Over All of Bath only, inches.....	54 $\frac{1}{2}$	60 $\frac{1}{2}$	66 $\frac{1}{2}$
Length Over All of Bath only from finished wall line, inches.....	54	60	66
Width Over All of Bath only, inches.....	29	29	29
Width Over All of Bath only from finished wall line, inches.....	28 $\frac{1}{2}$	28 $\frac{1}{2}$	28 $\frac{1}{2}$
Price as described.....	60.00	61.00	64.00

For Zinc White Exterior Finish, add: No. 1, 15.50; No. 2, 12.50; Albadent, 7.50.

Height from bottom of Bath to top of Rim 18 inches. Height from floor to top of Rim 17 $\frac{1}{2}$ inches. Depth inside 17 inches.

This Bath can be furnished for Left Hand Corner.

Nason Porcelain Enameled Iron Bath

Roslyn

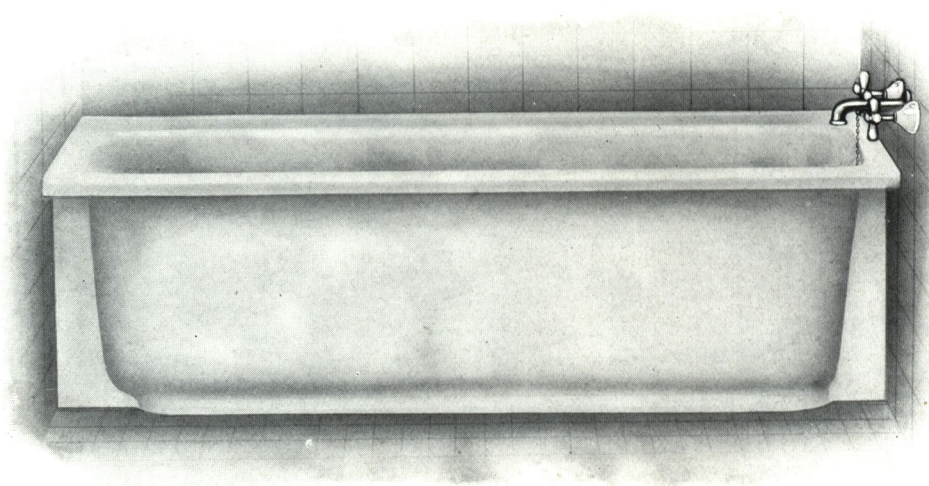


Plate 6520

The Roslyn Porcelain Enameled Iron Bath, with 3-inch Roll Rim, Plain Exterior, for Tiling into Recess, with Right Hand End Outlet, Concealed Compression Combination Over Rim Spout Supply Fitting, with Four-arm China Cross Handles and China Wall Escutcheons marked "Hot" and "Cold," Concealed Connected Waste and Overflow with Rubber Stopper and Chain.

Nominal Sizes, feet.....	4½	5	5½
Length Over All of Bath only, inches.....	53½	59½	65½
Length Over All of Bath only between finished wall lines, inches.....	52½	58½	64½
Width Over All of Bath only, inches.....	29	29	29
Width Over All of Bath only from finished wall line, inches.....	28½	28½	28½
Price as described.....	56.60	58.60	63.75

For Zinc White Exterior Finish, add: No. 1, 15.50; No. 2, 12.50; Albadent, 7.50.

Height from bottom of Bath to top of Rim 18 inches. Height from floor to top of Rim 17½ inches. Depth inside 17 inches.

This Bath can also be furnished with Left Hand End Outlet.

Nason Porcelain Enameled Iron Baths

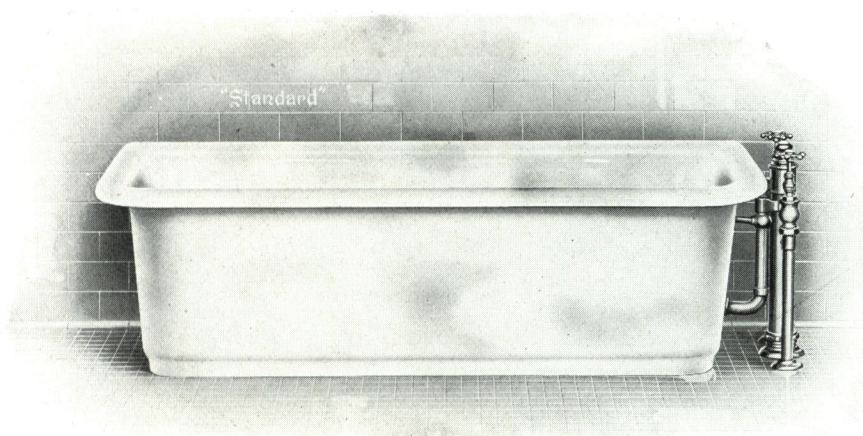


Plate 6530

The Piermont Porcelain Enameled Iron Bath, with 3-inch Roll Rim, Plain Exterior, Right Hand End Outlet, for Tiling in at Back Wall, with Nickel-plated Compression Bottom Bell Combination Supply Fitting, with Six Ball China Index Handles, Reliance Waste with China Index and $\frac{1}{2}$ -inch Supply Pipes.

Nominal Size, feet.....	5
Length Over All of Bath only, inches.....	61 $\frac{1}{2}$
Width Over All of Bath only, inches.....	29
Width Over All of Bath from finished wall line, inches.....	28 $\frac{1}{2}$
Price as described.....	75.00

For Zinc White Exterior Finish, add: No. 1, 15.50; No. 2, 12.50; Albadent, 7.50.

Height from bottom of bath to top of Rim 18 inches. Height from floor to top of Rim 17 $\frac{1}{2}$ inches. Depth inside 17 inches.

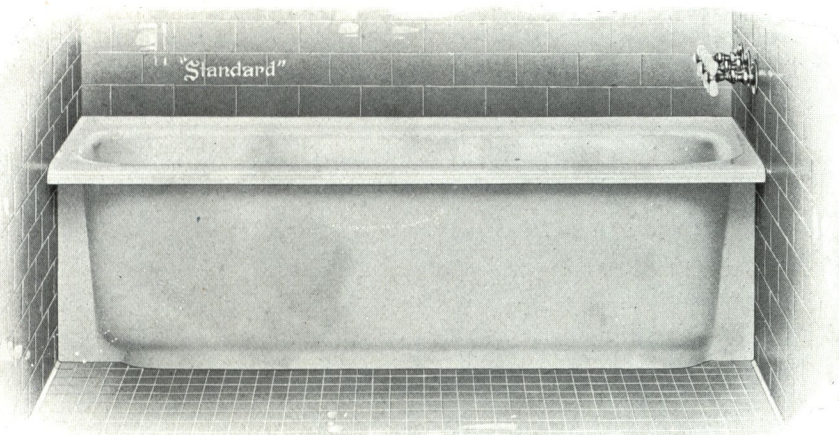


Plate 6531

The Roslyn Porcelain Enameled Iron Bath, with 3-inch Roll Rim, Plain Exterior, Right Hand End Outlet, for Tiling into Recess, with Nickel-plated Compression Combination Concealed Supply and Waste Fitting with Bottom Bell Inlet, $\frac{1}{2}$ -inch Supply Pipes, China Cross Handles with Indexes on Supply Valves and Waste.

Nominal Sizes, feet.....	4 $\frac{1}{2}$	5	5 $\frac{1}{2}$
Length Over All of Bath only, inches.....	53 $\frac{1}{2}$	59 $\frac{1}{2}$	65 $\frac{1}{2}$
Length Over All of Bath only between finished wall lines, inches.....	52 $\frac{1}{2}$	58 $\frac{1}{2}$	64 $\frac{1}{2}$
Width Over All of Bath only, inches.....	29	29	29
Width Over All of Bath only from finished wall line, inches.....	28 $\frac{1}{2}$	28 $\frac{1}{2}$	28 $\frac{1}{2}$
Price as described.....	60.00	61.00	64.00

For Zinc White Exterior Finish, add: No. 1, 15.50; No. 2, 12.50; Albadent, 7.50.

Height from bottom of Bath to top of Rim 18 inches. Height from floor to top of Rim 17 $\frac{1}{2}$ inches. Depth inside 17 inches

Either of the above Baths can be furnished with Left Hand End Outlet.

Nason Porcelain Enameled Iron Baths

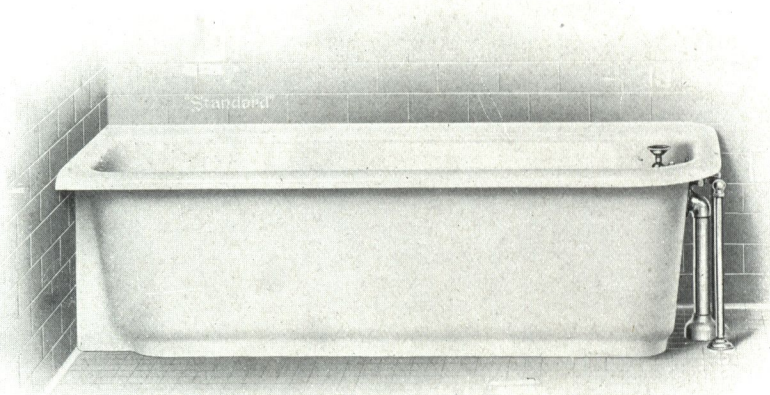


Plate 6540

The Tuxedo Porcelain Enameled Iron Bath, with 3-inch Roll Rim, Plain Exterior, Right Hand End Outlet, for Tiling into Left Hand Corner, with Nickel-plated No. 4½ Fuller Double Bath Cock with Plain Handles, ½-inch Supply Pipes and Special Connected Waste and Overflow, with Chain and Rubber Stopper.

Nominal Sizes, feet.....	4½	5	5½
Length Over All of Bath only, inches.....	54½	60½	66½
Length Over All of Bath only from finished wall line, inches.....	54	60	66
Width Over All of Bath only, inches.....	29	29	29
Width Over All of Bath only from finished wall line, inches.....	28½	28½	28½
Price as described.....	47.00	48.00	51.00

For Zinc White Exterior Finish, add: No. 1, 15.50; No. 2, 12.50; Albadent, 7.50.

Height from bottom of Bath to top of Rim 18 inches. Height from floor to top of Rim 17½ inches. Depth inside 17 inches. This Bath can be furnished for Right Hand Corner.

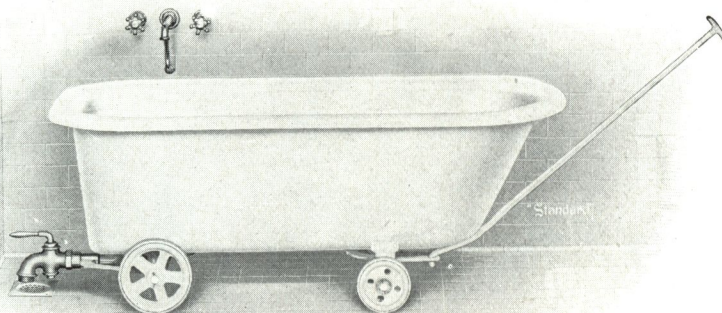


Plate 6541

The Wyola Porcelain Enameled Iron 3-inch Roll Rim Hospital Bath, on Wrought Iron Carriage with Rubber-tired Wheels, Swiveled Front Axle, and Removable Handle, 2-inch Lever Handle Quick Opening Waste Valve, Exterior Finished Plain.

Sizes, feet.....	4	4½	5	5½	6
Price as described.....	70.50	70.50	75.00	81.00	87.75

Width over Rim 30 inches. Height to top of Rim 22 inches. Depth inside 17 inches.

Combination Compression Supply Fitting as shown.....	10.00
Polished Brass Waste Trap with Hinged Lid 6 x 6 inches as shown.....	5.25

For Zinc White Exterior, add: No. 1, 15.50; No. 2, 12.50; Albadent, 6.00.

Nason Porcelain Enameled Iron Baths

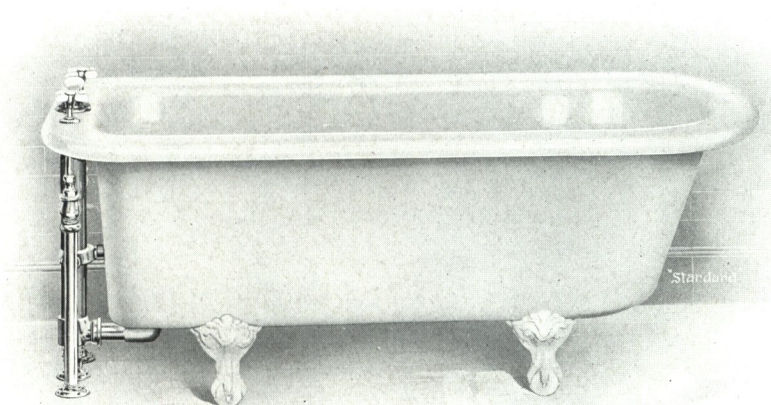


Plate 6550

The Luxuria Porcelain Enameled Iron, 4 $\frac{1}{4}$ -inch Flat Rim Bath on Claw Feet, Zinc White Exterior Finish, with Nickel-plated Compression Combination Bottom Bell Supply Fixture, with Four-arm China Cross Handles and China Indexes, Reliance Waste with China Knob coming through Rim of Tub, and $\frac{3}{4}$ -inch Supply Pipes.

Length Over Rim, feet inches.....	4-9	5-3	5-9	6-2 $\frac{1}{2}$
Price as described.....	103.50	109.50	118.50	122.00

Width over Rim 33 $\frac{1}{2}$ inches. Depth inside 17 $\frac{3}{4}$ inches.

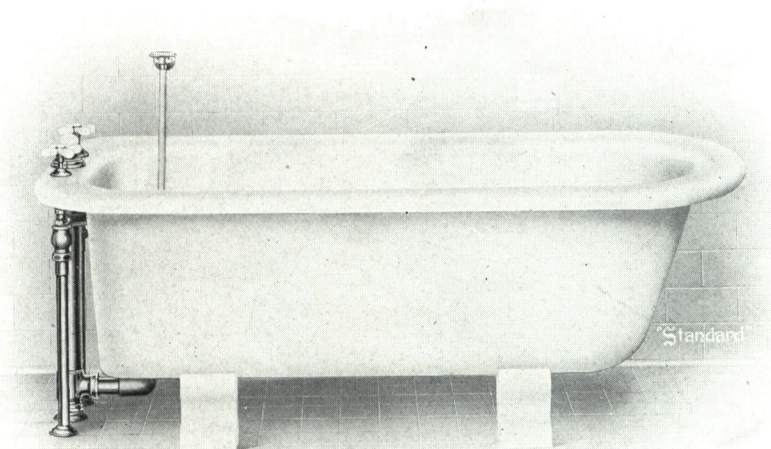


Plate 6551

The Luxuria Porcelain Enameled Iron, 4 $\frac{1}{4}$ -inch Flat Rim Bath on Enameled Block Feet, Zinc White Exterior Finish, with Nickel-plated Compression Combination Top Nozzle Supply Fixture, with Four-arm China Cross Handles and China Indexes, Reliance Waste with China Knob coming through Rim of Tub, and $\frac{3}{4}$ -inch Supply Pipes, Rubber Hose and Sprinkler.

Length Over Rim, feet inches.....	4-9	5-3	5-9	6-2 $\frac{1}{2}$
Price as described.....	112.00	118.00	124.50	130.50

Width over Rim 33 $\frac{1}{2}$ inches. Depth inside 17 $\frac{3}{4}$ inches.

Nason Porcelain Enameled Iron Baths



Plate 6560

The Luxuria Porcelain Enameled Iron 4 $\frac{1}{4}$ -inch Flat Rim Bath on Base, Zinc White Exterior Finish, with Nickel-plated Compression Combination Bottom Bell Supply Fixture, with Six-ball China Index Handles, Reliance Waste with China Index coming through Rim of Tub, and $\frac{3}{4}$ -inch Supply Pipes.

Length Over Rim, feet inches.....	4-9	5-3	5-9	6-2 $\frac{1}{2}$
Price as described.....	102.00	129.00	136.50	141.50

Width over Rim 33 $\frac{1}{2}$ inches. Depth inside 17 $\frac{3}{4}$ inches.



Plate 6561

The Wyola Porcelain Enameled Iron 3-inch Roll Rim Bath on Base, Zinc White Exterior Finish, with Nickel-plated Compression Combination Bottom Bell Supply Fixture, with Four-arm China Cross Handles, with China Indexes, Reliance Waste with China Knob and $\frac{1}{2}$ -inch Supply Pipes.

Sizes, feet.....	4	4 $\frac{1}{2}$	5	5 $\frac{1}{2}$	6
Price as described.....	76.75	76.75	76.75	81.50	94.00

Width over Rim 30 inches. Depth inside 17 inches.

Nason Porcelain Enameled Iron Baths

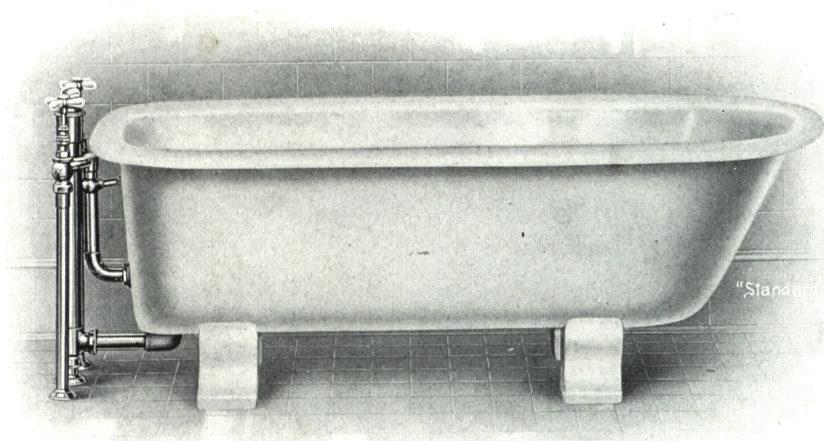


Plate 6570

The Wyola Porcelain Enameled Iron 3-inch Roll Rim Bath on Enameled Iron Block Feet, Zinc White Exterior Finish, with Nickel-plated Compression Combination Bottom Bell Supply Fixture with Four-arm China Cross Handles and China Indexes, Reliance Waste with China Knob and $\frac{1}{2}$ -inch Supply Pipes.

Sizes, feet.....	4	4 $\frac{1}{2}$	5	5 $\frac{1}{2}$	6
Price as described.....	76.00	76.00	76.00	80.50	90.00

Width over Rim 30 inches. Depth inside 17 inches.

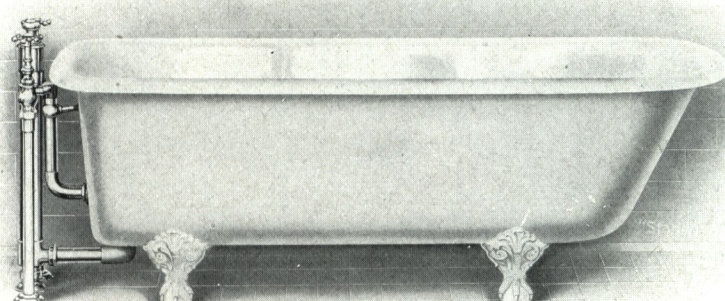


Plate 6571

The Wyola Porcelain Enameled Iron 3-inch Roll Rim Bath on Claw Feet, Plain Exterior, with Nickel-plated Compression Combination Bottom Bell Supply Fixture with Six-ball China Index Handles, Reliance Waste with China Index and $\frac{1}{2}$ -inch Supply Pipes.

Sizes, feet.....	4	4 $\frac{1}{2}$	5	5 $\frac{1}{2}$	6
Price as described.....	55.00	55.00	55.00	59.00	69.00

Width over Rim 30 inches. Depth inside 17 inches.

For Zinc White Exterior Finish, add: No. 1, 15.50; No. 2, 12.50; Albadent, 6.00.

Nason Porcelain Enameled Iron Baths

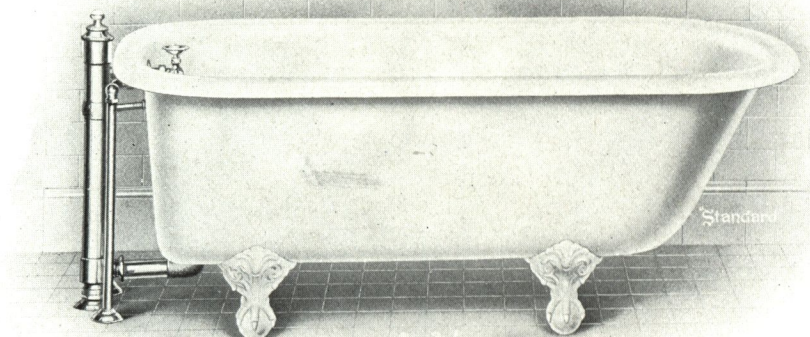


Plate 6580

The Wyola Porcelain Enameled Iron 3-inch Roll Rim Bath on Claw Feet, Plain Exterior, with Nickel-plated No. 4 1/2 Fuller Double Bath Cock, with Plain Handles, 1/2-inch Supply Pipes and Reliance Waste with China Index.

Sizes, feet.....	4	4 1/2	5	5 1/2	6
Price as described.....	39.50	39.50	39.50	43.75	53.00

Width over Rim 30 inches. Depth inside 17 inches.

For Zinc White Exterior Finish, add: No. 1, 15.50; No. 2, 12.50; Albadent, 6.00.

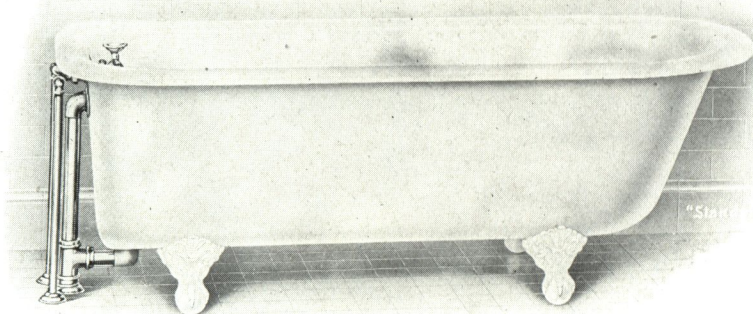


Plate 6581

The Wyola Porcelain Enameled Iron 3-inch Roll Rim Bath on Claw Feet, Plain Exterior, with Nickel-plated No. 4 1/2 Fuller Double Bath Cock, with Plain Handles, 1/2-inch Supply Pipes, Connected Waste and Overflow with Rubber Stopper and Chain.

Sizes, feet.....	4	4 1/2	5	5 1/2	6
Price as described.....	33.50	33.50	33.50	37.50	47.00

Width over Rim 30 inches. Depth inside 17 inches.

For Zinc White Exterior Finish, add: No. 1, 15.50; No. 2, 12.50; Albadent, 6.00.

Either of the above Baths will be furnished with a No. 10 Compression Bath Cock with China Index Handles at the same price.

Nason Porcelain Enameled Iron Baths

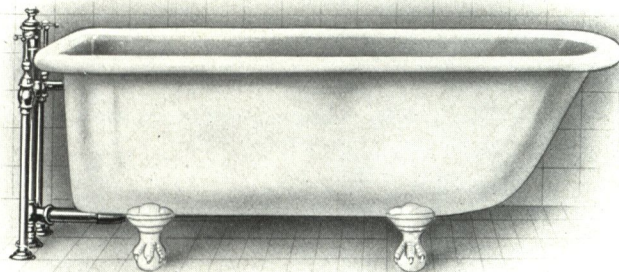


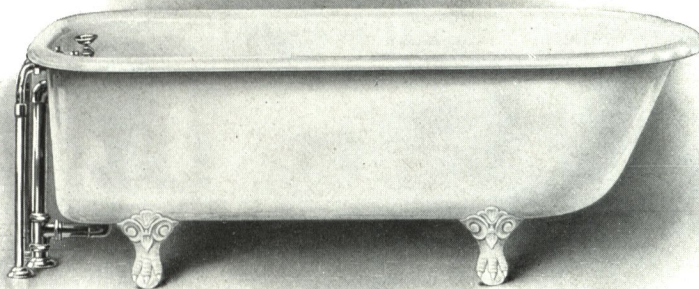
Plate 6590

The Gramatan Porcelain Enameled Iron 3-inch Roll Rim Bath on Claw Feet, Plain Exterior, with Nickel-plated Compression Combination Top Nozzle Supply Fixture with China Index Handles, $\frac{1}{2}$ -inch Supply Pipes and Reliance Waste with China Index.

Sizes, feet.....	4	4 $\frac{1}{2}$	5	5 $\frac{1}{2}$	6
Price as described.....	46.00	46.00	46.00	48.00	57.50

Width over Rim 30 inches. Depth inside 17 inches.

For Zinc White Exterior Finish, add: No. 1, 15.50; No. 2, 12.50; Albadent, 6.00.



"Standard"
PATENTED IN U.S.A.

Plate 6591

The Kanton Porcelain Enameled Iron 2 $\frac{1}{4}$ -inch Roll Rim Bath on Claw Feet, Plain Exterior, with Nickel-plated No. 4 $\frac{1}{2}$ Fuller Double Bath Cock with Plain Handles, $\frac{1}{2}$ -inch Supply Pipes, Connected Waste and Overflow with Rubber Stopper and Chain.

Sizes, feet.....	4	4 $\frac{1}{2}$	5	5 $\frac{1}{2}$	6
Price as described.....	37.00	37.00	40.00	45.00	51.00

Width over Rim 29 inches. Depth inside 17 $\frac{1}{2}$ inches.

For Zinc White Exterior Finish, add: No. 1, 15.50; No. 2, 12.50; Albadent, 6.00.

Nason Porcelain Enameled Iron Baths

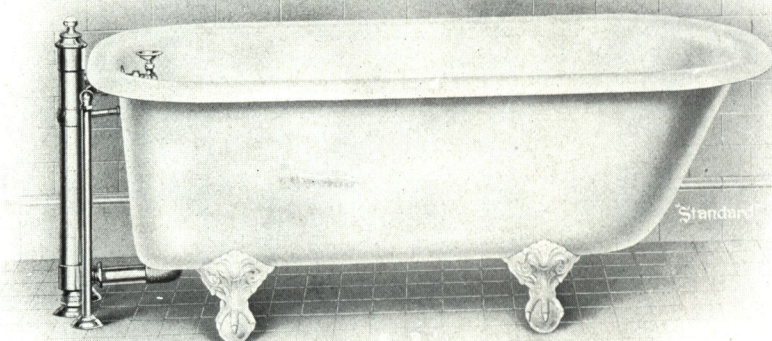


Plate 6600

The Dover Porcelain Enameled Iron 3-inch Roll Rim Bath on Claw Feet, plain exterior, with Nickel-plated No. 4½ Fuller Double Bath Cock, with Plain Handles and Ball Elbows, ½-inch Supply Pipes and Reliance Waste with China Index.

Sizes, feet.....	4	4½	5	5½	6
Price as described.....	37.00	37.00	37.00	40.50	49.00

Width over Rim 30 inches. Depth inside 17 inches.

For Zinc White Exterior Finish, add: No. 1, 15.50; No. 2, 12.50; Albadent, 6.00.

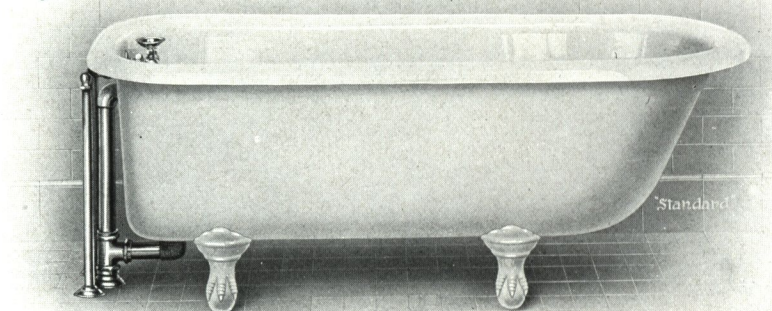


Plate 6601

The Special Porcelain Enameled Iron 3-inch Roll Rim Bath on Claw Feet, plain exterior, with Nickel-plated No. 4½ Fuller Double Bath Cock with Plain Handles, ½-inch Supply Pipes, Connected Waste and Overflow, with Rubber Stopper and Chain.

Sizes, feet.....	4	4½	5	5½	6
Price as described.....	31.00	31.00	31.00	35.00	44.00

Width over Rim 30 inches. Depth inside 17 inches.

For Zinc White Exterior Finish, add: No. 1, 15.50; No. 2, 12.50; Albadent, 6.00.

Either of the above Tubs will be furnished with a No. 10 Compression Bath Cock with China Index Handles at the same price.

Nason Porcelain Enameled Iron Baths

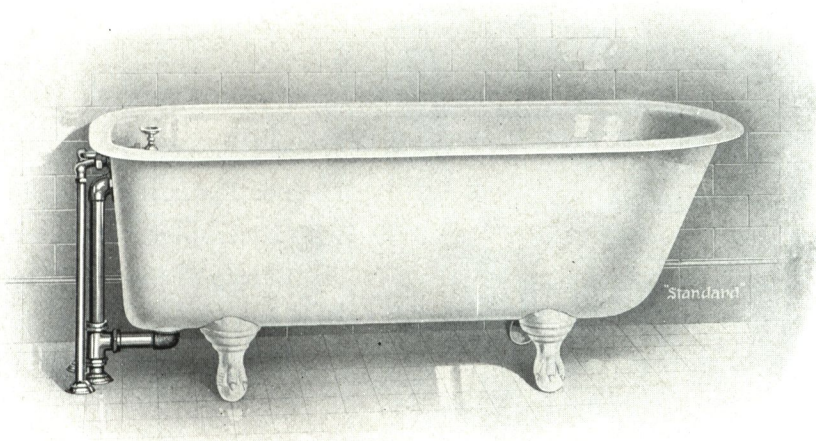


Plate 6610

The Dundee Porcelain Enameled Iron 2-inch Roll Rim Bath on Claw Feet, plain exterior, with No. 10 Nickel-plated Compression Double Bath Cock, with China Index Handles, $\frac{1}{2}$ -inch Supply Pipes, Connected Waste and Overflow with Rubber Stopper and Chain.

Sizes, feet.....	4	4 $\frac{1}{2}$	5	5 $\frac{1}{2}$	6
Price as described.....	31.00	31.00	31.00	35.00	44.00

Width over Rim 26 inches. Depth inside 17 inches.

For Zinc White Exterior Finish, add: No. 1, 15.50; No. 2, 12.50; Albadent, 6.00.

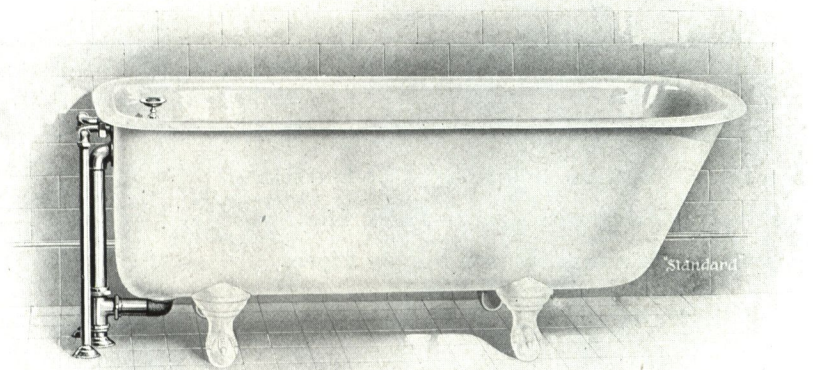


Plate 6611

The Narro Porcelain Enameled Iron $1\frac{3}{4}$ -inch Roll Rim Bath on Claw Feet, plain exterior, with No. 10 Nickel-plated Compression Double Bath Cock, with China Index Handles, $\frac{1}{2}$ -inch Supply Pipes, Connected Waste and Overflow with Rubber Stopper and Chain.

Sizes, feet.....	4	4 $\frac{1}{2}$	5	5 $\frac{1}{2}$	6
Price as described.....	31.00	31.00	31.00	35.00	44.00

Width over Rim 24 $\frac{1}{2}$ inches. Depth inside 17 $\frac{1}{4}$ inches.

Designed for replacing Copper Tubs and for Narrow Bath Rooms where space is limited.



Plate 6620

Nason Baby Baths

Plate 6620

The Babe Solid Porcelain Roll Rim Nursery Bath on Pedestal, Glazed Inside and Outside, with Nickel-plated Compression Combination Bell Supply Fitting with China Index Handles, Reliance Waste with China Knob, $\frac{1}{2}$ -inch Supply Pipes and 2-inch Trap to wall.

Dimensions

Length Outside.....	36 inches
Width Outside.....	24 inches
Height, Floor to Top of Rim.....	31 inches
Depth Inside.....	13 inches

Price

As described, Class A.....	101.00
As described, Class B.....	81.00

Plate 6621

The Ideal Porcelain Enameled Iron Roll Rim Nursery Bath on Pedestal, Enameled All Over, with Nickel-plated Compression Combination Bell Supply Fitting with China Index Handles, Reliance Waste with China Index and $\frac{1}{2}$ -inch Supply Pipes.

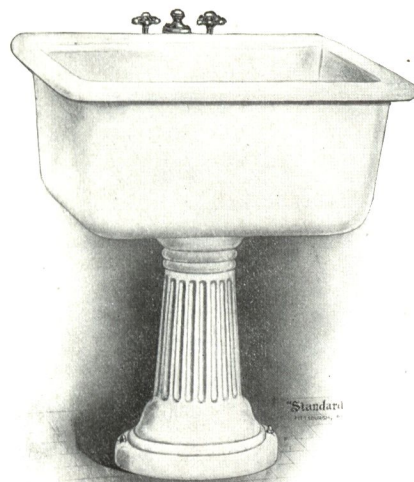


Plate 6621

Dimensions

Width Over Rim.....	20 inches
Length Over Rim.....	32 inches
Height, Floor to Top of Rim.....	30 inches
Depth Inside.....	12 inches
Width of Roll Rim.....	2 $\frac{1}{4}$ inches

Price

As described.....	80.00
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Nason Porcelain Sitz and Foot Bath

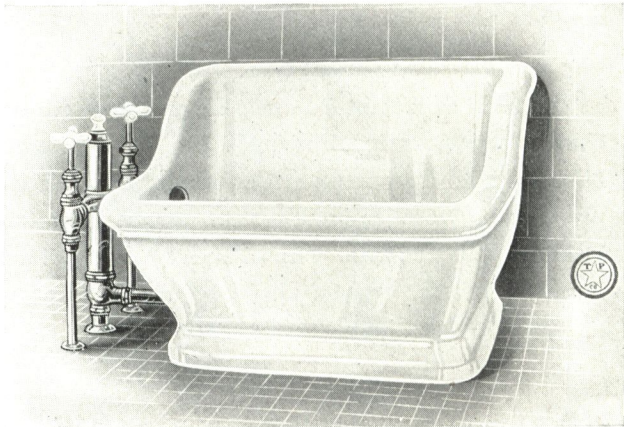


Plate 6630

Plate 6630

The Nymph Solid Porcelain Roll Rim Sitz Bath on Base, Glazed Inside and Outside, with Nickel-plated Compression Combination Bell Supply Fitting with Solid China Cross Handles marked "Hot" and "Cold," Reliance Waste with China Knob, 1/2-inch Supply Pipes.

Supply can be placed on either side. State when ordering which is wanted.

Outlet is through bottom at center.

Dimensions	
Length Outside.....	30 inches
Width Outside.....	27 inches
Height at Back.....	21 inches
Height at Front.....	15 inches

Price	
As described, Class A.....	94.50
As described, Class B.....	74.75

Plate 6631

The Mermaid Solid Porcelain Roll Rim Foot Bath on Base, Glazed Inside and Outside, with Nickel-plated Compression Combination Bell Supply Fitting with Solid China Cross Handles marked "Hot" and "Cold," Reliance Waste with China Knob and 1/2-inch Supply Pipes.

Waste in center through back.

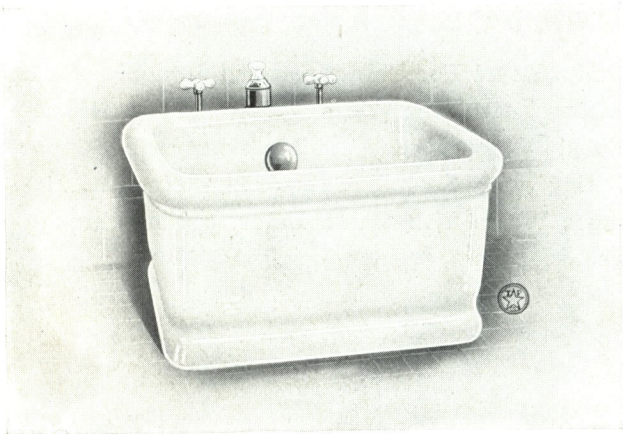


Plate 6631

Dimensions	
Length Outside.....	25 inches
Width Outside.....	21 inches
Height, Floor to Top.....	14 inches

Price	
As described, Class A.....	56.25
As described, Class B.....	47.75

Nason Porcelain Enameled Iron Sitz Baths

Plate 6640

The Milo Porcelain Enameled Iron Sitz Bath on Claw Feet, Exterior Finished Zinc White, with Nickel-plated Compression Combination Bell Supply Fitting with Six-ball China Index Handles, Reliance Waste with China Index and $\frac{1}{2}$ -inch Supply Pipes.

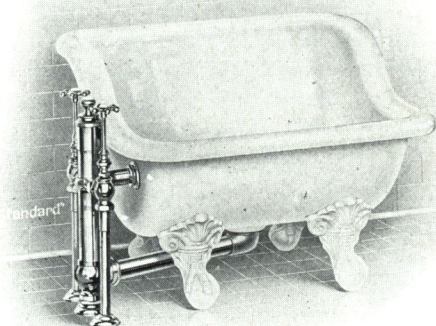


Plate 6640

Dimensions

Front to Back Over Rim.....	27 $\frac{3}{4}$ inches
Width Over Rim.....	28 $\frac{1}{2}$ inches
Width of Rim.....	3 inches
Height to Top of Rim at Back.....	20 inches
Height to Top of Rim at Front.....	15 inches

Price

As described.....	69.00
If Plain Exterior instead of Zinc White Finish, deduct.....	9.00

Plate 6641

The Royal Porcelain Enameled Iron Sitz Bath on Base, with Zinc White Exterior Finish, Nickel-plated Compression Combination Bell Supply Fitting, with Six-ball China Index Handles, Reliance Waste with China Index, coming through Extension Rim, $\frac{1}{2}$ -inch Supply Pipes.

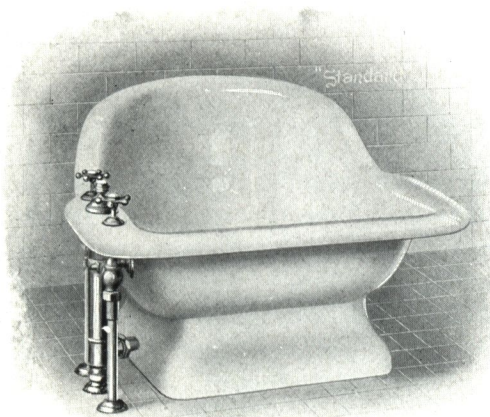


Plate 6641

Dimensions

Front to Back Over Rim.....	31 $\frac{1}{2}$ inches
Width Over Rim.....	34 inches
Height to Top of Rim at Back.....	23 inches
Height to Top of Rim at Front.....	15 inches
Width of Rim.....	3 inches
Width of Extension Rim.....	5 inches
Depth Inside at Outlet.....	10 $\frac{1}{2}$ inches

Price

As described.....	92.00
If Plain Exterior instead of Zinc White Finish, deduct.....	9.00

Fitting can be furnished for Right Hand Side if so desired.

Nason Porcelain Enameled Iron Foot Tubs



Plate 6650

The Trilby Porcelain Enameled Iron Roll Rim Foot Bath on Claw Feet, with plain exterior, Nickel-plated Fuller Bell Supply Fitting with China Handles, Reliance Waste with China Knob and $\frac{1}{2}$ -inch Supply Pipes.

Plate 6650

Sizes No.	1	2
Width Over Rim, inches	19 $\frac{1}{2}$	23
Length Over Rim, inches	22 $\frac{1}{4}$	25
Width of Roll Rim, inches	2 $\frac{1}{4}$	2 $\frac{1}{2}$
Height to Top of Rim, inches	15 $\frac{1}{2}$	18
Depth Inside, inches	10 $\frac{3}{4}$	13 $\frac{1}{2}$
Price as described	47.00	50.00
Add for No. 1, Zinc White Exterior Finish		7.00
Add for No. 2, Zinc White Exterior Finish		5.00

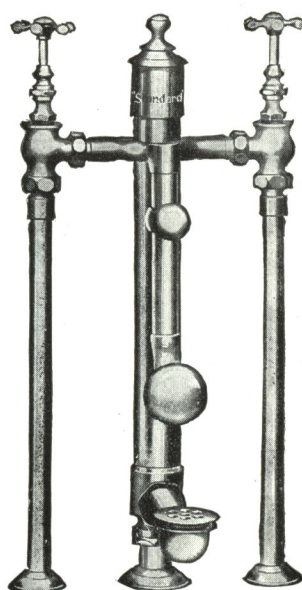
Plate 6651

The Regal Porcelain Enameled Iron Roll Rim Foot Bath on Base, with plain exterior, Nickel-plated Compression Combination Bell Supply Fitting and Reliance Waste, coming through Extended Rim, with China Index Handles and Knob, $\frac{1}{2}$ -inch Supply Pipes.



Plate 6651

Width Over Rim	23 $\frac{5}{8}$ inches
Length Over Rim	25 $\frac{3}{8}$ inches
Width of Roll Rim	2 $\frac{7}{8}$ inches
Height to Top of Rim	15 $\frac{1}{4}$ inches
Depth Inside	10 $\frac{3}{4}$ inches
Price as described	54.00
Add for No. 1, Zinc White Exterior Finish	7.00
Add for No. 2, Zinc White Exterior Finish	5.00



Bath Supply and Waste Fittings

Plate 6660

Nickel-plated Reliance Bottom Bell Supply and Waste Fitting, with Compression Valves with China Indexes and China Index on Waste. Fitting to be used outside of rim of tub.

Plate 6660 with $\frac{1}{2}$ -inch Supply Pipes.....	17.00
Plate 6660 with $\frac{3}{4}$ -inch Supply Pipes.....	18.00
Add for Rim Flanges.....	2.00
Add for China Cross Handles and China Knob on Waste.....	3.50

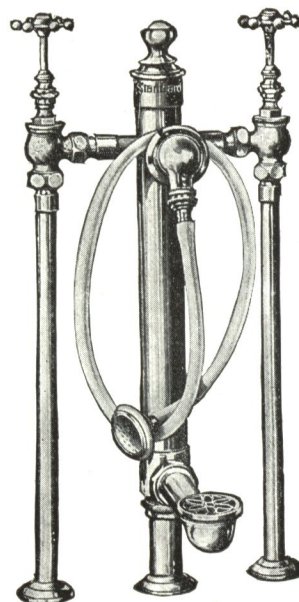


Plate 6661

Nickel-plated Reliance Top Nozzle Supply and Waste Fitting with Rubber Hose and Sprinkler, Compression Valves with China Indexes and China Index on Waste. Fitting to be used outside of rim of tub.

Plate 6661 with $\frac{1}{2}$ -inch Supply Pipes.....	18.00
Plate 6661 with $\frac{3}{4}$ -inch Supply Pipes.....	19.00
Add for Rim Flanges.....	2.00
Add for China Cross Handles and China Knob on Waste.....	3.50

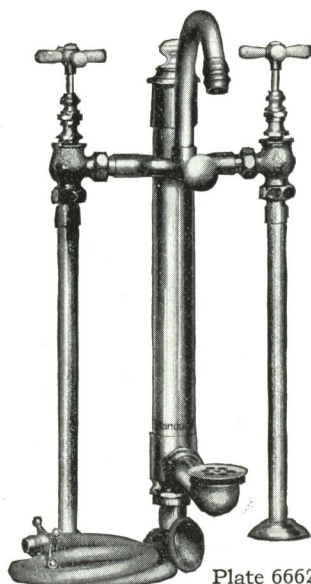


Plate 6662

Nickel-plated Reliance Over Rim Supply and Waste Fitting, with Rubber Hose and Sprinkler, Compression Valves with China Cross Handles and Indexes and China Knob on Waste.

Plate 6662 with $\frac{1}{2}$ -inch Supply Pipes.....	25.50
Plate 6662 with $\frac{3}{4}$ -inch Supply Pipes.....	26.50

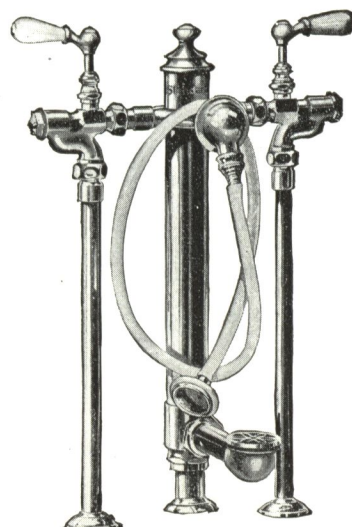


Plate 6663

Nickel-plated Reliance Top Nozzle Supply and Waste Fitting, with Rubber Hose and Sprinkler, Fuller Valves with China Handles and Indexes and China Index on Waste. Fitting to be used outside of rim of tub.

Plate 6663 with $\frac{1}{2}$ -inch Supply Pipes.....	26.00
Plate 6663 with $\frac{3}{4}$ -inch Supply Pipes.....	27.00
Add for China Knob on Waste.....	1.00
Add for Rim Flanges.....	2.00

For Unions on Supply Pipes at floor on any of the above Fittings, add: $\frac{1}{2}$ -inch, 1.50; $\frac{3}{4}$ -inch, 2.00.

Bath Wastes

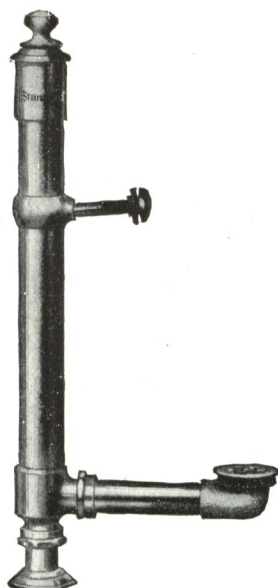


Plate 6670

Nickel-plated Reliance Bath Waste, with China Index Knob.

Plate 6670 as described, with 2-inch Body.....	8.00
Plate 6670 as described, with 2 3/8-inch Body.....	9.00
Add for China Knob.....	1.00
Add if Fitted for Solid Porcelain Tub.....	1.00



Plate 6671

Nickel-plated Standing Waste and Overflow, with Ground Seat, to be used inside of tub.

Plate 6671 as described.....	4.50
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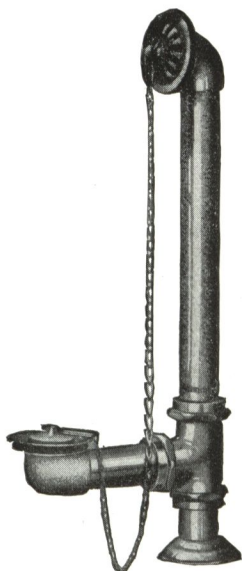


Plate 6672

Nickel-plated 1 1/2-inch Connected Waste and Overflow, with Ell Top, Chain and Rubber Stopper.

Plate 6672 as described.....	3.50
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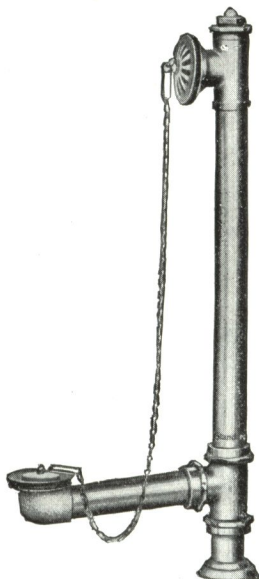


Plate 6673

Nickel-plated 1 1/2-inch Connected Waste and Overflow, with Tee Top with Removable Cap, Chain and Rubber Stopper.

Plate 6673 as described.....	5.25
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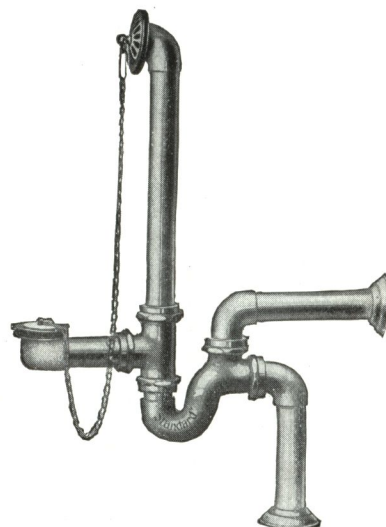


Plate 6674

Nickel-plated 1 1/2-inch Connected Waste and Overflow, with Ell Top, Chain and Rubber Stopper and S Trap with vent to wall.

Plate 6674 as described.....	6.50
Add for Tee Top.....	.75
Deduct if without Vent.....	.50

All-White China Bathroom Fixtures

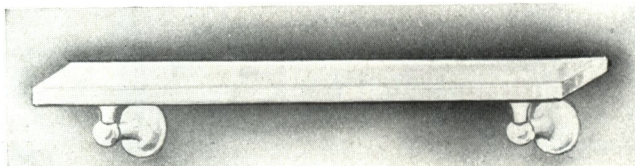


Plate 6680

All White Shelf with China Brackets and Opal Glass Top

Size 5 x 18 inches, each.....	4.00	Size 6 x 18 inches, each.....	4.20
Size 5 x 24 inches, each.....	4.60	Size 6 x 24 inches, each.....	4.80
Size 5 x 30 inches, each.....	5.00	Size 6 x 30 inches, each.....	5.20
Size 5 x 36 inches, each.....	5.60	Size 6 x 36 inches, each.....	5.80

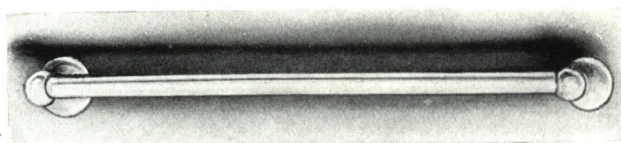


Plate 6681

All White Towel Bar with China Posts and Opal Glass Bar

1-inch Bar 18 inches long, each.....	3.20	1-inch Bar 36 inches long, each.....	4.20
1-inch Bar 24 inches long, each.....	3.40	1-inch Bar 48 inches long, each.....	5.60
1 1/4 x 24-inch Hand Rail, each.....		4.60	

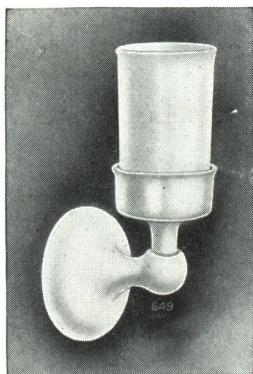


Plate 6682

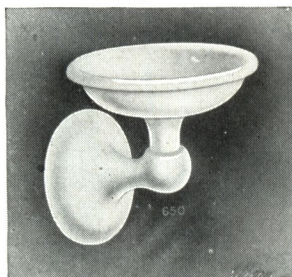


Plate 6683

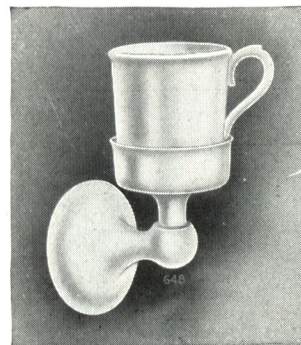


Plate 6684

White China Vase Holder
and Vase

Complete..... 2.50

White China Soap Holder with
Removable Soap Dish

Complete..... 2.50

White China Mug Holder
and Mug

Complete..... 2.50

All our China Bathroom Fixtures are attached to the wall with a concealed hanger, so that no metal is exposed.

All-White China Bathroom Fixtures

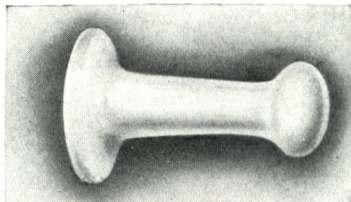


Plate 6690
White China Coat or
Towel Hanger

Each..... .90

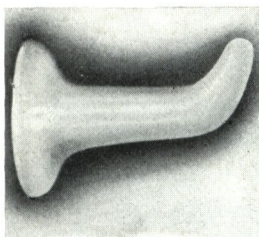


Plate 6691
White China Robe
Hook

Each..... .80

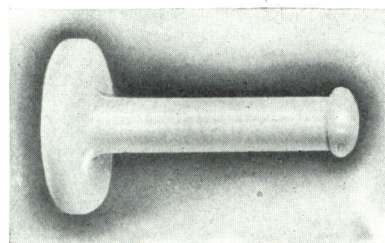


Plate 6692
White China Roll Toilet
Paper Rod

Each..... 1.00

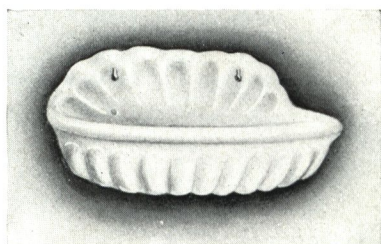


Plate 6693
White China Comb and
Brush Holder

Each..... 3.00

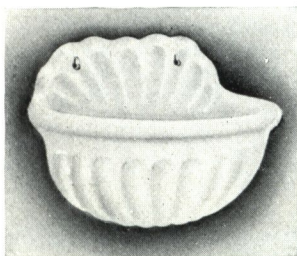


Plate 6694
White China Sponge
Holder

Each..... 2.00

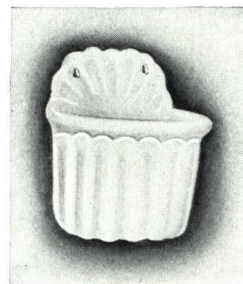


Plate 6695
White China Sheet
Paper Holder

Each..... 2.00



Plate 6696
White China Wall Soap
Holder

Each..... 1.40



Plate 6697
White China Whisk
Broom Holder

Each..... 2.00

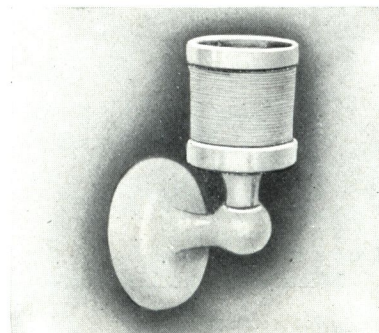


Plate 6698
White China Match
Holder

Each..... 2.00

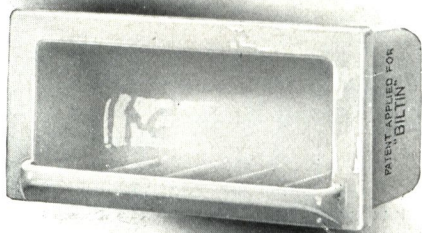


Plate 6699

The Biltin China Soap Holder

Made of one piece of China and tiles into the wall at back of fixture. Convenient, sanitary.

Plate 6699

For the Lavatory, 6 x 3 x 3 inches, each..... 3.00
For the Bath, 6 x 6 x 3 inches, each..... 3.00
For the Kitchen Sink, 6 x 4 1/4 x 2 inches, each..... 3.00

Glass Shelves

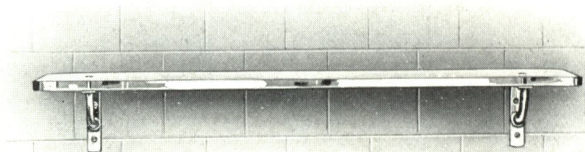


Plate 6700

Plate Glass Shelf $\frac{1}{2}$ inch thick, with Cast White Metal Brackets

	Crystal	Opal
Size 5 x 18 inches, each.....	3.50	4.25
Size 5 x 24 inches, each.....	4.00	4.75
Size 5 x 27 inches, each.....	4.25	5.00
Size 5 x 30 inches, each.....	4.35	5.10
Size 5 x 33 inches, each.....	4.50	5.50
Size 5 x 36 inches, each.....	4.75	5.75

White Metal Brackets only, per pair 1.90.

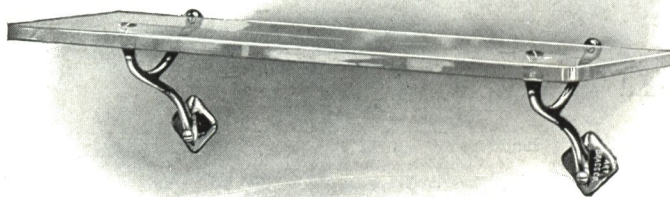


Plate 6701

Plate Glass Shelf $\frac{3}{8}$ inch thick, with Cast Brass Nickel-plated Brackets

	Crystal	Opal
Size 5 x 18 inches, each.....	2.50	2.90
Size 5 x 20 inches, each.....	2.60	3.05
Size 5 x 24 inches, each.....	2.80	3.35
Size 5 x 30 inches, each.....	3.10	3.80

Nickel-plated Brackets only, per pair 1.20.

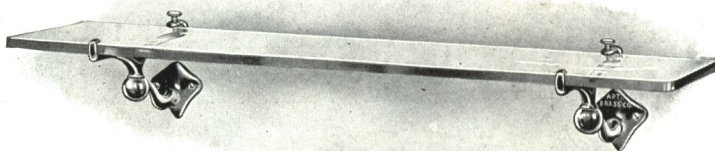


Plate 6702

Plate Glass Shelf $\frac{3}{8}$ inch thick, with Cast Brass Nickel-plated Set Screw Brackets

	Crystal	Opal
Size 6 x 18 inches, each.....	3.50	4.00
Size 6 x 20 inches, each.....	3.65	4.20
Size 6 x 24 inches, each.....	3.95	4.60
Size 6 x 30 inches, each.....	4.40	5.20
Size 6 x 36 inches, each.....	5.00	5.95

Nickel-plated Set-Screw Brackets only, per pair 1.80.

Nickel-plated Brass Screws with all Wall Fixtures.

Glass Shelves With Tumbler Holders

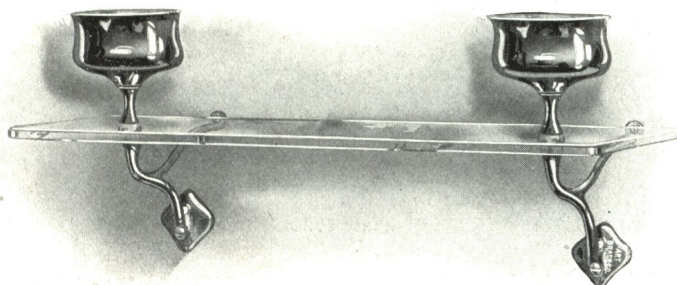


Plate 6710

Plate Glass Shelf with Nickel-plated Tumbler Holders and Brackets

Crystal Glass	5 x 18 inches, each	3.85	Opal Glass	5 x 18 inches, each	4.25
Crystal Glass	5 x 20 inches, each	3.95	Opal Glass	5 x 20 inches, each	4.40
Crystal Glass	5 x 24 inches, each	4.15	Opal Glass	5 x 24 inches, each	4.70
Crystal Glass	5 x 30 inches, each	4.45	Opal Glass	5 x 30 inches, each	5.15

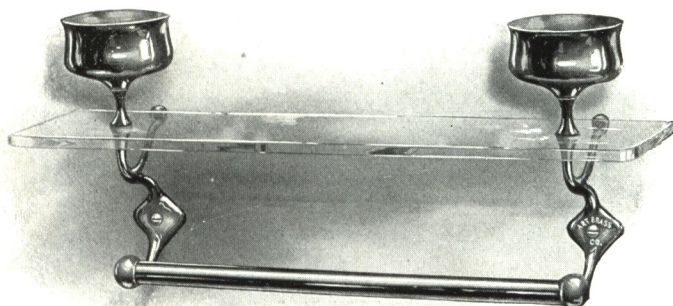


Plate 6711

Plate Glass Shelf with Towel Bar, Nickel-plated Tumbler Holders and Brackets

Crystal Glass	5 x 24-inch Shelf with $\frac{5}{8}$ x 18-inch Bar, each	5.30
Crystal Glass	5 x 30-inch Shelf with $\frac{5}{8}$ x 24-inch Bar, each	5.90
Opal Glass	5 x 24-inch Shelf with $\frac{5}{8}$ x 18-inch Bar, each	6.00
Opal Glass	5 x 30-inch Shelf with $\frac{5}{8}$ x 24-inch Bar, each	6.75

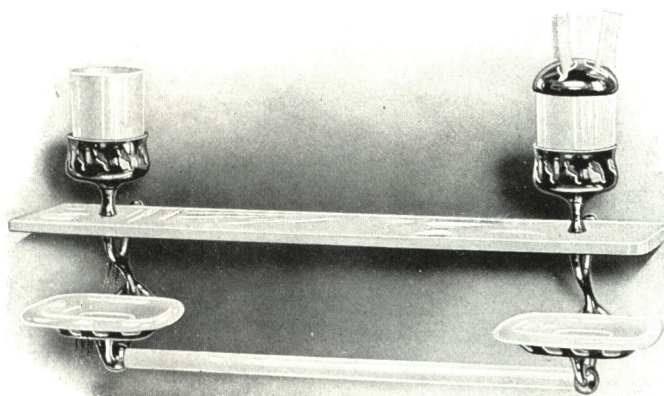


Plate 6712

Shelf Combination

Crystal Glass	5 x 24-inch Shelf and $\frac{5}{8}$ x 18-inch Bar, each	8.20
Crystal Glass	5 x 30-inch Shelf and $\frac{5}{8}$ x 24-inch Bar, each	8.80
Opal Glass	5 x 24-inch Shelf and $\frac{5}{8}$ x 18-inch Bar, each	9.15
Opal Glass	5 x 30-inch Shelf and $\frac{5}{8}$ x 24-inch Bar, each	9.90

Nickel-plated Brass Screws with all Wall Fixtures.

Glass Shelves

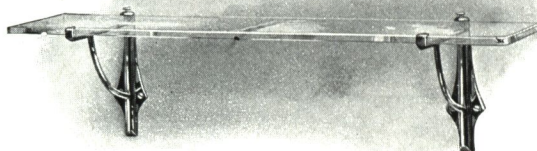


Plate 6720

Plate Glass Shelf, $\frac{1}{4}$ inch thick, with Stamped Brass Nickel-plated Set Screw Brackets

	Crystal	Opal
Size 5 x 18 inches, each.....	1.80	2.20
Size 5 x 20 inches, each.....	1.90	2.35
Size 5 x 24 inches, each.....	2.10	2.65
Size 5 x 30 inches, each.....	2.40	3.10

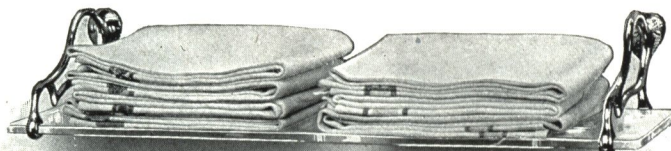


Plate 6721

Plate Glass Towel Shelf, with Cast Brass Nickel-plated Brackets

	Crystal
Size 6 x 18 inches, each.....	3.65
Size 6 x 20 inches, each.....	3.80
Size 6 x 24 inches, each.....	4.10
Size 6 x 30 inches, each.....	4.55
Size 6 x 36 inches, each.....	5.15

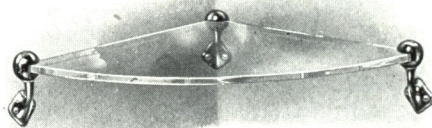


Plate 6722

Plate Glass Shelf for Corner
With Cast Brass Nickel-plated Brackets

	Crystal
Size 10 inches along wall, each.....	3.70
Size 12 inches along wall, each.....	4.15
Size 14 inches along wall, each.....	4.60

Nickel-plated Brass Screws with all Wall Fixtures.

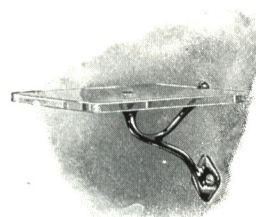


Plate 6723

Small Plate Glass Shelf
With Cast Brass Nickel-plated Bracket

	Crystal
Size 6 x 6 inches, each.....	1.35

Place it next the telephone, or wherever you need a small shelf. In bathroom, sewing room, in office for drinking cup, or elsewhere.

Glass Shelves with Towel Bars

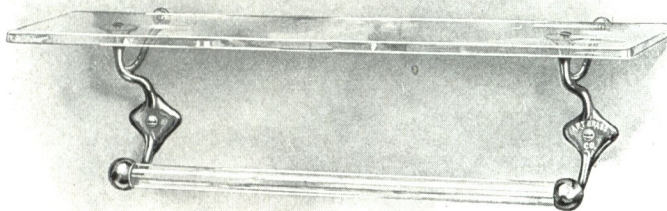


Plate 6730

Plate Glass Shelf with Towel Bar—Cast Brass Nickel-plated Brackets

Plate 6730

Crystal Shelf with Crystal Towel Bar

5 x 24-inch Shelf with $\frac{5}{8}$ x 18-inch Bar, each.....	3.95
5 x 30-inch Shelf with $\frac{5}{8}$ x 24-inch Bar, each.....	4.55

Plate 6730A

Crystal Shelf with Nickel-plated Towel Bar

5 x 24-inch Shelf with $\frac{5}{8}$ x 18-inch Bar, each.....	3.95
5 x 30-inch Shelf with $\frac{5}{8}$ x 30-inch Bar, each.....	4.55

Plate 6730B

Opal Shelf with Opal Towel Bar

5 x 24-inch Shelf with $\frac{5}{8}$ x 18-inch Bar, each.....	4.65
5 x 30-inch Shelf with $\frac{5}{8}$ x 24-inch Bar, each.....	5.40

Plate 6730C

Opal Shelf with Nickel-plated Towel Bar

5 x 24-inch Shelf with $\frac{5}{8}$ x 18-inch Bar, each.....	4.50
5 x 30-inch Shelf with $\frac{5}{8}$ x 24-inch Bar, each.....	5.25

Plate 6731

Crystal Shelf with Crystal Towel Bar

5 x 24-inch Shelf with $\frac{5}{8}$ x 18-inch Bar, each..	4.35
5 x 30-inch Shelf with $\frac{5}{8}$ x 24-inch Bar, each..	4.95

Plate 6731A

Crystal Shelf with Nickel-plated Towel Bar

5 x 24-inch Shelf with $\frac{5}{8}$ x 18-inch Bar, each..	4.35
5 x 30-inch Shelf with $\frac{5}{8}$ x 24-inch Bar, each..	4.95

Plate 6731B

Opal Shelf with Opal Towel Bar

5 x 24-inch Shelf with $\frac{5}{8}$ x 18-inch Bar, each..	5.05
5 x 30-inch Shelf with $\frac{5}{8}$ x 24-inch Bar, each..	5.80

Plate 6731C

Opal Shelf with Nickel-plated Towel Bar

5 x 24-inch Shelf with $\frac{5}{8}$ x 18-inch Bar, each..	4.95
5 x 30-inch Shelf with $\frac{5}{8}$ x 24-inch Bar, each..	5.65

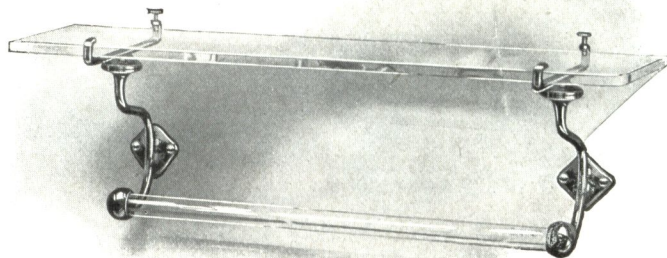


Plate 6731

Plate Glass Shelf with Towel Bar
Cast Brass Nickel-plated Set Screw Brackets

Plate 6732

Crystal Shelf with Crystal Towel Bar

Five Inch

5 x 24-inch Shelf with $\frac{5}{8}$ x 18-inch Bar, each..	4.70
5 x 30-inch Shelf with $\frac{5}{8}$ x 24-inch Bar, each..	5.30

Six Inch

6 x 24-inch Shelf with 1 x 18-inch Bar, each...	7.10
6 x 30-inch Shelf with 1 x 24-inch Bar, each...	7.95

Plate 6732A Opal Shelf with Opal Towel Bar

Five Inch

5 x 24-inch Shelf with $\frac{5}{8}$ x 18-inch Bar, each..	5.40
5 x 30-inch Shelf with $\frac{5}{8}$ x 24-inch Bar, each..	6.15

Six Inch

6 x 24-inch Shelf with 1 x 18-inch Bar, each...	8.15
6 x 30-inch Shelf with 1 x 24-inch Bar, each...	9.15

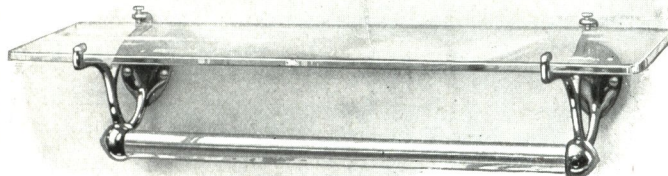
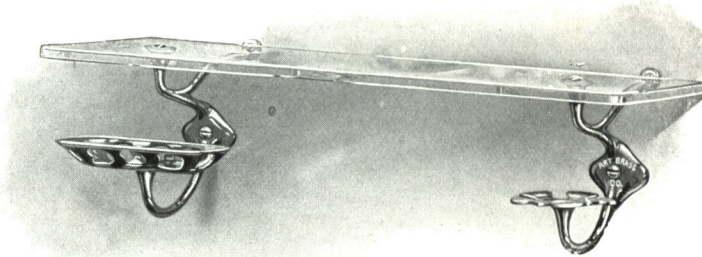


Plate 6732

Plate Glass Shelf with Towel Bar
Cast Brass Nickel-plated Set Screw Brackets

Nickel-plated Brass Screws with all Wall Fixtures.

Glass Shelves



Plates 6740

Plate Glass Shelf with Nickel-plated Brackets, Soap Dish and Tooth Brush Holder

Crystal Glass

5 x 18 inches, each	3.75
5 x 20 inches, each	3.85
5 x 24 inches, each	4.05
5 x 30 inches, each	4.35

Opal Glass

5 x 18 inches, each	4.15
5 x 20 inches, each	4.30
5 x 24 inches, each	4.60
5 x 30 inches, each	5.05

Glass Shelves, Complete with Rail

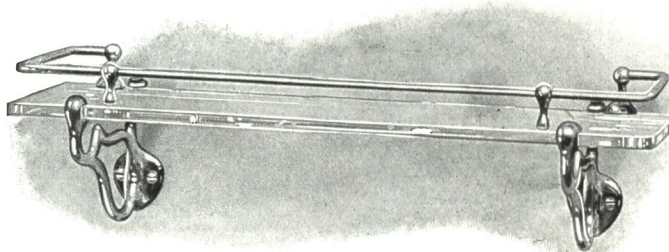


Plate 6741

Plate Glass Shelf with Nickel-plated Brackets and Rail

Five-Inch Shelf Complete with Rail

5 x 18 inches, Crystal Shelf with Rail as shown, each	4.85
5 x 20 inches, Crystal Shelf with Rail as shown, each	5.10
5 x 24 inches, Crystal Shelf with Rail as shown, each	5.75
5 x 30 inches, Crystal Shelf with Rail as shown, each	6.50
5 x 18 inches, Opal Shelf with Rail as shown, each	5.25
5 x 20 inches, Opal Shelf with Rail as shown, each	5.55
5 x 24 inches, Opal Shelf with Rail as shown, each	6.30
5 x 30 inches, Opal Shelf with Rail as shown, each	7.20

Six-Inch Shelf Complete with Rail

6 x 18 inches, Crystal Shelf with Rail as shown, each	5.75
6 x 20 inches, Crystal Shelf with Rail as shown, each	6.20
6 x 24 inches, Crystal Shelf with Rail as shown, each	6.80
6 x 30 inches, Crystal Shelf with Rail as shown, each	7.75
6 x 18 inches, Opal Shelf with Rail as shown, each	6.25
6 x 20 inches, Opal Shelf with Rail as shown, each	6.75
6 x 24 inches, Opal Shelf with Rail as shown, each	7.45
6 x 30 inches, Opal Shelf with Rail as shown, each	8.55

Rails Only for Glass Shelves

Plate 6742

Five-Inch Rail without Shelf

5 x 18 inches, Rail without Shelf, each	1.85
5 x 20 inches, Rail without Shelf, each	2.00
5 x 24 inches, Rail without Shelf, each	2.45
5 x 30 inches, Rail without Shelf, each	2.90

This Rail fits any five-inch shelf shown in this catalogue.

Six-Inch Rail without Shelf

6 x 18 inches, Rail without Shelf, each	2.10
6 x 20 inches, Rail without Shelf, each	2.40
6 x 24 inches, Rail without Shelf, each	2.70
6 x 30 inches, Rail without Shelf, each	3.20

This Rail fits any six-inch shelf shown in this catalogue.

Rubber under posts prevent injury to glass.

Nickel-plated Brass Screws with all Wall Fixtures.

Glass Towel Bars

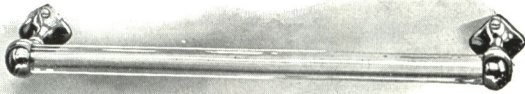


Plate 6750

Crystal Glass Towel Bar
With Nickel-plated Brass Posts

Five-eighths Inch Crystal Glass

$\frac{5}{8}$ x 18 inches, each.....	1.15
$\frac{5}{8}$ x 24 inches, each.....	1.45
$\frac{5}{8}$ x 30 inches, each.....	1.75

One Inch Crystal Glass

1 x 18 inches, each.....	2.10
1 x 24 inches, each.....	2.50
1 x 30 inches, each.....	2.90
1 x 36 inches, each.....	3.30

One and One-Quarter Inch Crystal Glass

$1\frac{1}{4}$ x 18 inches, each.....	3.90
$1\frac{1}{4}$ x 24 inches, each.....	4.40
$1\frac{1}{4}$ x 30 inches, each.....	4.90
$1\frac{1}{4}$ x 36 inches, each.....	5.40

The $1\frac{1}{4}$ -inch Bars are designed for Hand Rails as well as Towel Bars.



Plate 6751

Opal Glass Towel Bar
With Nickel-plated Brass Posts

Five-eighths Inch Opal

$\frac{5}{8}$ x 18 inches, each.....	1.50
$\frac{5}{8}$ x 24 inches, each.....	1.80
$\frac{5}{8}$ x 30 inches, each.....	2.10

One Inch Opal

1 x 18 inches, each.....	2.50
1 x 24 inches, each.....	2.90
1 x 30 inches, each.....	3.30
1 x 36 inches, each.....	3.70

One and One-Quarter Inch Opal

$1\frac{1}{4}$ x 18 inches, each.....	4.40
$1\frac{1}{4}$ x 24 inches, each.....	4.90
$1\frac{1}{4}$ x 30 inches, each.....	5.40
$1\frac{1}{4}$ x 36 inches, each.....	5.90

Glass Towel Bars With Ornamental Ends

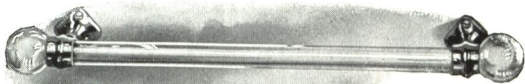


Plate 6752

Crystal Glass Towel Bar with Solid Crystal
Ends and Nickel-plated Brass Posts

One Inch Crystal Bar, Two Inch Solid Crystal Ends

1 x 18 inches, Center to Center of Posts, each....	3.40
1 x 24 inches, Center to Center of Posts, each....	3.80
1 x 30 inches, Center to Center of Posts, each....	4.20
1 x 36 inches, Center to Center of Posts, each....	4.60

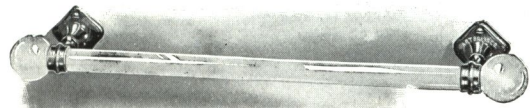


Plate 6753

Opal Glass Towel Bar with Solid Opal Ends
and Nickel-plated Brass Posts

One Inch Opal Bar, Two Inch Solid Opal Ends

1 x 18 inches, Center to Center of Posts, each....	4.00
1 x 24 inches, Center to Center of Posts, each....	4.40
1 x 30 inches, Center to Center of Posts, each....	4.80
1 x 36 inches, Center to Center of Posts, each....	5.20

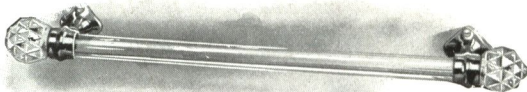


Plate 6754

Crystal Glass Towel Bar with Cut Glass
Ends and Nickel-plated Brass Posts

One Inch Crystal Bar, Two Inch Cut Glass Ends

1 x 18 inches, Center to Center of Posts, each....	5.40
1 x 24 inches, Center to Center of Posts, each....	5.80
1 x 30 inches, Center to Center of Posts, each....	6.20
1 x 36 inches, Center to Center of Posts, each....	6.60



Plate 6755

Opal Glass Towel Bar with Crystal Cut
Glass Ends and Nickel-plated Brass Posts

One Inch Opal Bar, Two Inch Cut Glass Ends

1 x 18 inches, Center to Center of Posts, each....	5.80
1 x 24 inches, Center to Center of Posts, each....	6.20
1 x 30 inches, Center to Center of Posts, each....	6.60
1 x 36 inches, Center to Center of Posts, each....	7.00

Nickel-plated Brass Screws with all Wall Fixtures.

Glass Towel Bars and Hand Rails

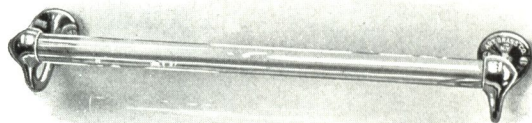


Plate 6760

Glass Towel Bar with Nickel-plated Cast Brass Posts
with Heart-shape Wall Flanges

	Crystal	Opal
$\frac{5}{8}$ x 18 inches, each.....	1.50	1.65
$\frac{5}{8}$ x 24 inches, each.....	1.80	1.95
$\frac{5}{8}$ x 30 inches, each.....	2.10	2.25
1 x 18 inches, each.....	2.30	2.70
1 x 24 inches, each.....	2.70	3.10
1 x 30 inches, each.....	3.10	3.50
1 x 36 inches, each.....	3.50	3.90
$1\frac{1}{4}$ x 18 inches, each.....	4.25	4.75
$1\frac{1}{4}$ x 24 inches, each.....	4.75	5.25
$1\frac{1}{4}$ x 30 inches, each.....	5.25	5.75
$1\frac{1}{4}$ x 36 inches, each.....	5.75	6.25

Double Towel Bars

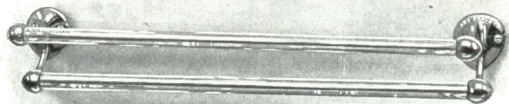


Plate 6761

Double Glass Towel Bar
with Nickel-plated Cast Brass Posts

	Crystal	Opal
$\frac{5}{8}$ x 18 inches, each.....	2.70	3.00
$\frac{5}{8}$ x 24 inches, each.....	3.30	3.60
$\frac{5}{8}$ x 30 inches, each.....	3.90	4.20
1 x 18 inches, each.....	4.60	5.35
1 x 24 inches, each.....	5.35	6.10
1 x 30 inches, each.....	6.10	6.85
1 x 36 inches, each.....	6.85	7.60

Corner Towel Bars



Plate 6763

Glass Corner Towel Bar
with Nickel-plated Cast Brass Posts

One Inch	Crystal	Opal
1 x 18 inches, each.....	2.10	2.50
1 x 24 inches, each.....	2.50	2.90
1 x 30 inches, each.....	2.90	3.30

Nickel-plated Brass Screws with all Wall Fixtures.

Triple Towel Bars

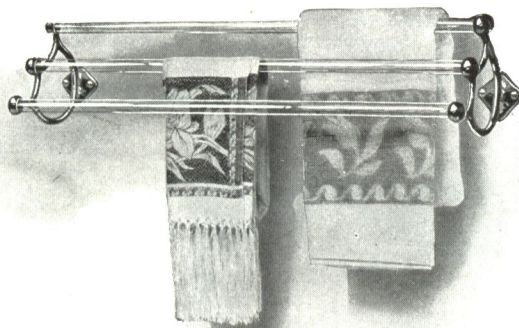


Plate 6762

Triple Glass Towel Bar
with Nickel-plated Cast Brass Posts

	Crystal	Opal
$\frac{5}{8}$ x 18 inches, each.....	3.20	3.65
$\frac{5}{8}$ x 24 inches, each.....	3.95	4.40
$\frac{5}{8}$ x 30 inches, each.....	4.70	5.15

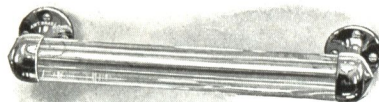
 $1\frac{1}{2}$ -Inch Grab Rails—Extra Heavy

Plate 6764

	Crystal	Opal
$1\frac{1}{2}$ x 12 inches, each.....	4.75	5.50
$1\frac{1}{2}$ x 18 inches, each.....	5.50	6.25

Of great help in getting in and out of bath tub. Prevent falls and especially helpful to heavy or infirm persons.

Nickel-plated Towel Bars



Plate 6770

Nickel-plated Brass Towel Bar

Three-Eighths Inch

$\frac{3}{8}$ x 16 inches, each.....	.33
$\frac{3}{8}$ x 18 inches, each.....	.36
$\frac{3}{8}$ x 24 inches, each.....	.40
Project $2\frac{7}{8}$ inches. Flange diameter, $1\frac{7}{8}$ inches.	

One-Half Inch

Five-Eighths Inch

$\frac{1}{2}$ x 9 inches, each.....	.47	$\frac{5}{8}$ x 16 inches, each.....	.60
$\frac{1}{2}$ x 12 inches, each.....	.50	$\frac{5}{8}$ x 18 inches, each.....	.69
$\frac{1}{2}$ x 16 inches, each.....	.53	$\frac{5}{8}$ x 24 inches, each.....	.83
$\frac{1}{2}$ x 18 inches, each.....	.58	$\frac{5}{8}$ x 30 inches, each.....	1.10
$\frac{1}{2}$ x 24 inches, each.....	.72	$\frac{5}{8}$ x 36 inches, each.....	1.30
$\frac{1}{2}$ x 30 inches, each.....	.86	Project $3\frac{1}{4}$ inches. Flange diameter, $2\frac{1}{4}$ inches.	
$\frac{1}{2}$ x 36 inches, each.....	1.10	Extra substantial bar with strong flange.	
Project $3\frac{1}{4}$ inches. Flange diameter, $2\frac{1}{4}$ inches.			



Plate 6771

Nickel-plated Brass Towel Bar

One-Half Inch

$\frac{1}{2}$ x 18 inches, each.....	.85
$\frac{1}{2}$ x 24 inches, each.....	1.05
$\frac{1}{2}$ x 30 inches, each.....	1.25

Five-Eighths Inch

One Inch

$\frac{5}{8}$ x 18 inches, each.....	1.15	1 x 18 inches, each.....	2.10
$\frac{5}{8}$ x 24 inches, each.....	1.45	1 x 24 inches, each.....	2.50
$\frac{5}{8}$ x 30 inches, each.....	1.75	1 x 30 inches, each.....	2.90
$\frac{5}{8}$ x 36 inches, each.....	2.05	1 x 36 inches, each.....	3.30

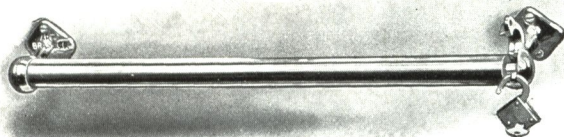


Plate 6772

Nickel-plated Roller Towel Bar with Lock

One-Inch With Lock

One-Inch Without Lock

1 x 18 inches, with Lock, each.....	3.10	1 x 18 inches, without Lock, each.....	2.60
1 x 24 inches, with Lock, each.....	3.50	1 x 24 inches, without Lock, each.....	3.00

Nickel-plated Brass Screws with all Wall Fixtures.

Nickel-plated Towel Bars

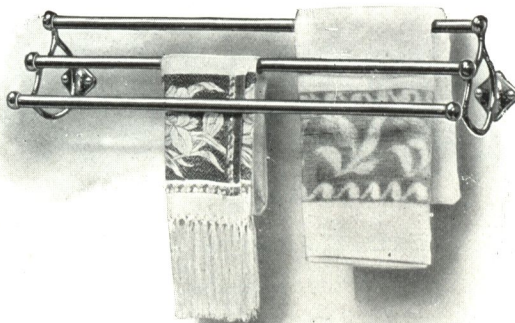


Plate 6780

Nickel-plated Triple Towel Bar
Five-Eighths Inch

$\frac{5}{8}$ x 18 inches, each	3.20
$\frac{5}{8}$ x 24 inches, each	3.95
$\frac{5}{8}$ x 30 inches, each	4.70

Three-Post Towel Bars

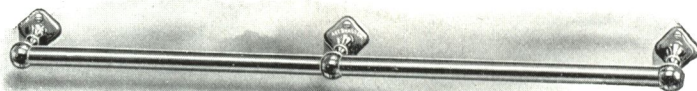


Plate 6781

Nickel-plated Three-Post Towel Bar

Five-Eighths Inch		One-Inch		One and One-Quarter Inch.	
$\frac{5}{8}$ x 36 inches, each	1.90	1 x 36 inches, each	3.50	$1\frac{1}{4}$ x 36 inches, each	6.70
$\frac{5}{8}$ x 48 inches, each	2.50	1 x 48 inches, each	4.30	$1\frac{1}{4}$ x 48 inches, each	7.70
$\frac{5}{8}$ x 60 inches, each	3.10	1 x 60 inches, each	5.10	$1\frac{1}{4}$ x 60 inches, each	8.70
$\frac{5}{8}$ x 72 inches, each	3.70	1 x 72 inches, each	5.90	$1\frac{1}{4}$ x 72 inches, each	9.70

Swinging Towel Bars

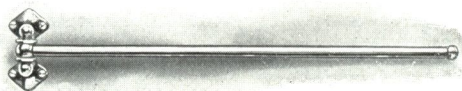


Plate 6782

$\frac{3}{8}$ x 15 inches, One-bar, each	.85
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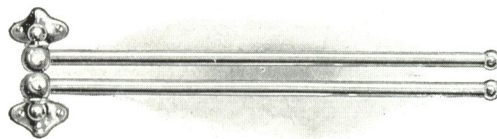


Plate 6783

$\frac{3}{8}$ x 15 inches, Two-bar, each	1.05
$\frac{1}{2}$ x 15 inches, Two-bar, each	1.35

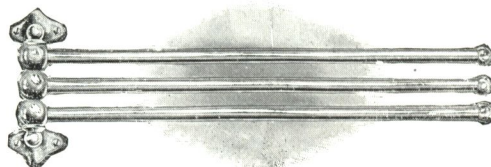


Plate 6784

$\frac{3}{8}$ x 15 inches, Three-bar, each	1.25	$\frac{1}{2}$ x 15 inches, Three-bar, each	1.70
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Nickel-plated Brass Screws with all Wall Fixtures.

Towel Shelf

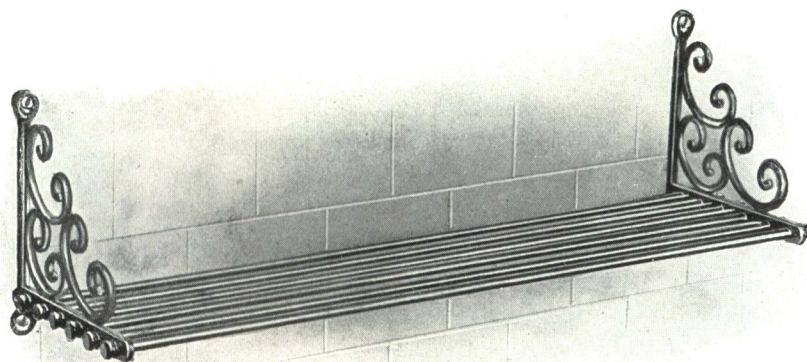


Plate 6790

Nickel-plated Brass Towel Shelf

No. 1	20 inches long, 6 inches wide, each.....	4.00
No. 2	26 inches long, 6 inches wide, each.....	5.20

Comb and Brush Holders



Plate 6791

Nickel-plated Solid Brass Comb and Brush Holder with Concealed Hanger

Size 5 x 10 $\frac{3}{4}$ inches, each.....	1.65
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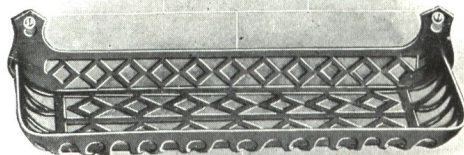


Plate 6792

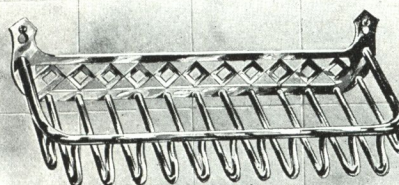


Plate 6793

Nickel-plated Brass Comb and Brush Holder

Size 4 x 10 $\frac{1}{2}$ inches, each.....	2.00
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Nickel-plated Brass Comb and Brush Holder

Size 3 $\frac{3}{4}$ x 9 $\frac{1}{4}$ inches, each.....	1.60
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Nickel-plated Brass Screws with all Wall Fixtures.

Basin Soap Dishes

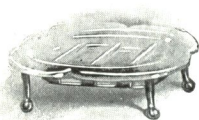


Plate 6800

Nickel-plated Holder
with Removable
Opal Tray

Each..... 1.05



Plate 6801

Nickel-plated Holder
with Removable
Opal Tray

Tray $4\frac{7}{8} \times 6\frac{1}{8}$ inches, each.... 1.50



Plate 6802

Nickel-plated Brass Dish
with Removable Perforated
Nickel Drainer

Size $4\frac{1}{2} \times 6\frac{1}{4}$ inches, each..... 1.65

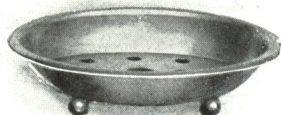


Plate 6803

Nickel-plated Oval Brass Dish
with Removable Perforated
Nickel Drainer

Size 6 x 4 inches, each..... .75

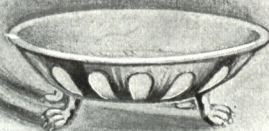


Plate 6804

Nickel-plated Holder
with Removable
China Tray

Size $5\frac{1}{2} \times 4$ inches, each..... 1.70

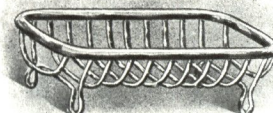


Plate 6805

Nickel-plated Brass
Wire Dish

Size 4 x 3 inches, each..... .70

Each $5\frac{1}{2} \times 3$ inches, each..... 1.10

Basin Soap Dish With Chain Stay

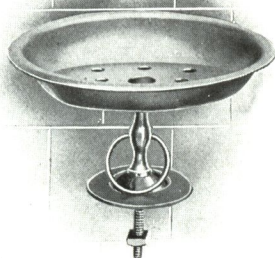


Plate 6806

Nickel-plated Brass Cock Hole Soap Dish
with Chain Stay and Removable
Nickel Drainer

Size 6 x 4 inches, each..... 1.10



Plate 6807

Nickel-plated Brass Cock Hole Soap Dish
with Chain Stay and Removable
Opal Tray

Size $4 \times 5\frac{3}{8}$ inches, each..... 1.40

Wall Soap Dishes



Plate 6810

Nickel-plated Brass Holder
with Removable
Opal Tray

Size 4 x 5 $\frac{3}{8}$ inches, each60



Plate 6811

Nickel-plated Brass Holder with
Ring Hook and Removable
Opal Tray

Size 4 x 5 $\frac{3}{8}$ inches, each1.40



Plate 6812

Nickel-plated Brass Holder
with Removable
China Dish

Size 4 $\frac{7}{8}$ x 6 $\frac{1}{8}$ inches, each1.65



Plate 6813

Nickel-plated Brass Soap Dish
with Removable Perforated
Nickel Drainer

Size 4 $\frac{1}{2}$ x 6 $\frac{1}{4}$ inches, each1.80

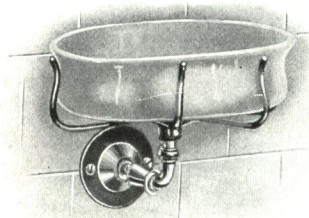


Plate 6814

Nickel-plated Brass Holder
with China Dish

Size 5 $\frac{1}{4}$ x 3 $\frac{3}{4}$ inches, each1.50



Plate 6815

Nickel-plated Brass Soap Dish
with Perforated Bottom

Size 4 $\frac{1}{2}$ x 6 $\frac{1}{4}$ inches, each1.45

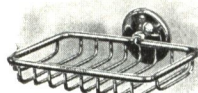


Plate 6816

Nickel-plated Brass Wire
Soap Dish

Size 4 x 5 $\frac{3}{8}$ inches, each85

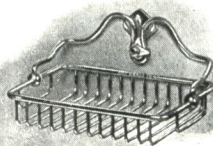


Plate 6817

Nickel-plated Brass Wire
Removable Soap Dish

Size 4 $\frac{1}{4}$ x 6 inches, each1.10

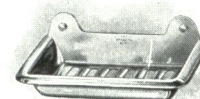


Plate 6818

Nickel-plated Brass Sink
Soap Dish

Size 3 $\frac{1}{8}$ x 5 $\frac{1}{4}$ inches, each55



Plate 6819

Nickel-plated Solid Bottom
Soap Dish

Size 3 x 4 inches

Solid Bottom, each35
Perforated Bottom, each35



Plate 6819A

Nickel-plated Corner Soap Dish
with Perforated Bottom

Size 3 x 4 $\frac{1}{2}$ inches, each40



Plate 6819B

Nickel-plated Cast Brass
Shower Soap Holder

Size 3 $\frac{1}{4}$ x 3 $\frac{3}{8}$ inches, each70
With Clamp for $\frac{5}{8}$ or $\frac{3}{4}$ O. D.
Tube, each80

Nickel-plated Brass Screws with all Wall Fixtures

Bath Soap Dishes

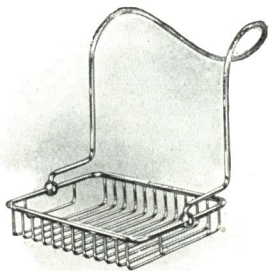


Plate 6820

Nickel-plated Brass Wire
Bath Soap Dish

Size $4\frac{1}{4}$ x 6 inches

For Regular Rims, each 1.10
For Rims 4 to 6 inches, each . . . 1.35

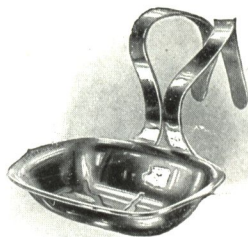


Plate 6821

Nickel-plated Brass Bath Soap
Dish, Perforated Bottom

Size $4\frac{1}{2}$ x $6\frac{1}{2}$ inches

For Regular Rims, each 1.35
For Rims 4 to 6 inches, each . . . 1.50

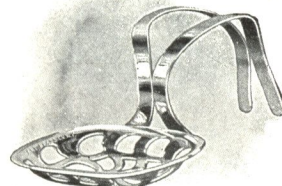


Plate 6822

Nickel-plated Brass Bath
Soap Dish

Size $3\frac{1}{2}$ x 5 inches

For Regular Rims, each80
For Rims 4 to 6 inches, each95



Plate 6823

Nickel-plated Brass Bath
Soap Dish

Size $3\frac{1}{2}$ x $4\frac{1}{4}$ inches, each55



Plate 6824

Nickel-plated Brass Bath Soap
Dish with Perforated
Bottom

Size $4\frac{1}{2}$ x $6\frac{1}{4}$ inches, each 1.35

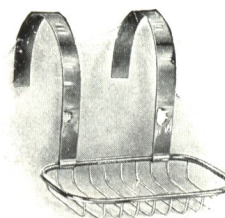


Plate 6825

Nickel-plated Brass Wire Bath
Soap Dish with 8-inch Straps
to fit any size Rim

Size $3\frac{1}{2}$ x 5 inches, each60

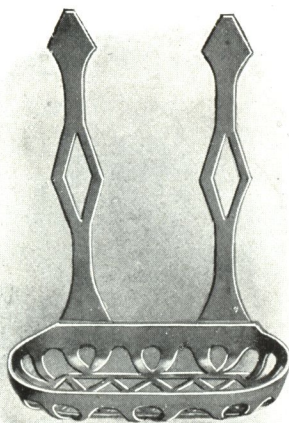


Plate 6826

Nickel-plated Brass Bath Soap Dish with
 $9\frac{1}{2}$ -inch Straps to fit any size Rim

Size 6 x 3 inches, each 1.60

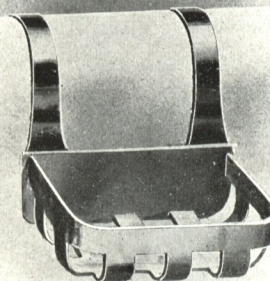


Plate 6827

Nickel-plated Brass Bath Soap Dish with
 $9\frac{1}{2}$ -inch Straps to fit any size Rim

Size 5 x $3\frac{1}{2}$ inches, each 2.30

Soap and Sponge Holders

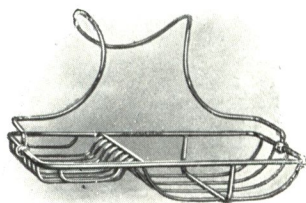


Plate 6830

Nickel-plated Soap and
Sponge Holder

Size 5 x 11 inches

For 2 to 4 inch Rim, each..... 1.50
For 4 to 6 inch Rim, each..... 1.80



Plate 6831

Nickel-plated Soap and
Sponge Holder

For Regular Rims, each..... 2.20
For 4 to 6 inch Rims, each..... 2.40

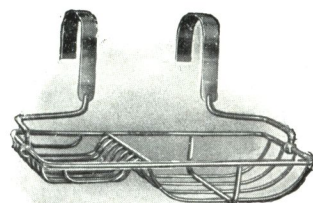


Plate 6832

Nickel-plated Soap and Sponge
Holder, with Straps to fit
any Rim

Size 5 x 11 inches, each..... 1.65

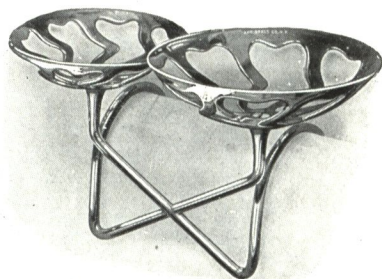


Plate 6833

Nickel-plated Soap and Sponge Holder
Cast Brass

Each..... 3.75

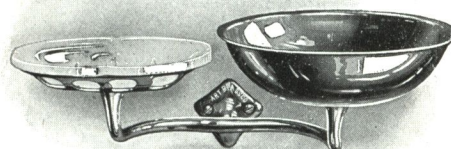


Plate 6834

Nickel-plated Soap and Sponge Holder with
Opal Soap Tray and Wall Flange

Each..... 2.70

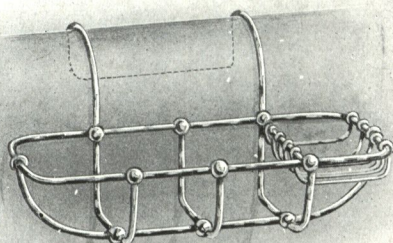


Plate 6835

Nickel-plated Heavy Brass Wire
Soap and Sponge Holder

Size 11 x 6 x 2½ inches, each..... 2.40

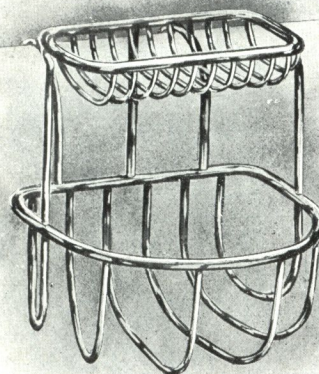


Plate 6836

Nickel-plated Heavy Brass Wire
Soap and Sponge Holder

Each..... 2.40

Sponge Holders



Plate 6840

Nickel-plated Brass Wall Sponge Holder

Diameter 6½ inches, each..... 1.45

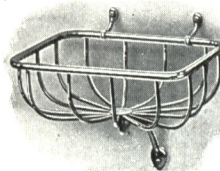


Plate 6841

Nickel-plated Brass Wall Sponge Basket

Size 10 x 7½ x 3½ inches, each..... 3.50

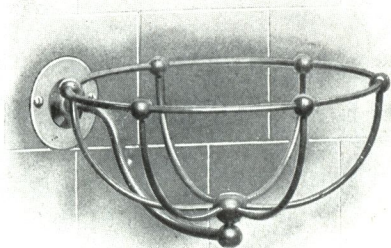


Plate 6842

Nickel-plated Brass Wall Sponge Basket

Size 7½ x 3½ inches, each..... 1.70



Plate 6843

Nickel-plated Cast Brass Wall Sponge Holder

Size 5½ x 6¾ inches, each..... 1.95

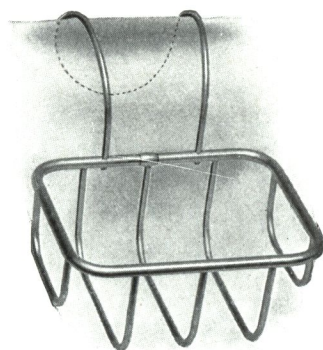


Plate 6844

Nickel-plated Brass Sponge Holder for
Rim of Bath Tub

Size 6½ x 5 x 3 inches, each..... 1.10

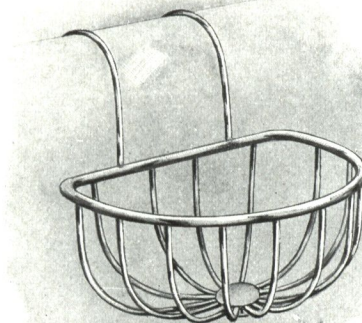


Plate 6845

Nickel-plated Brass Sponge Holder for
Rim of Bath Tub

Size 8 x 6 x 3½ inches, each..... 2.00

Soap, Tumbler and Toothbrush Holders

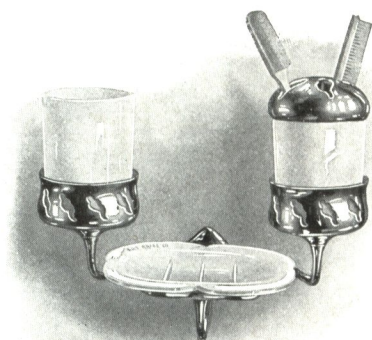


Plate 6850

Nickel-plated Combination with Opal Tumbler
Toothbrush Holder and Soap Dish

Complete, Less Brushes..... 3.80



Plate 6851

Nickel-plated Combination with Two Opal
Tumblers and Soap Dish

Complete..... 3.80

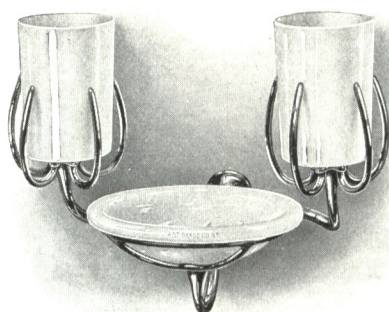


Plate 6852

Nickel-plated Combination with Two Opal
Tumblers and Soap Dish

Complete..... 4.15

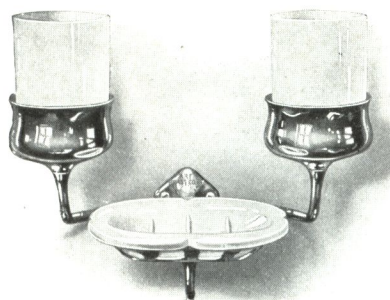


Plate 6853

Nickel-plated Combination with Two Opal
Tumblers and Soap Dish

Complete..... 3.30

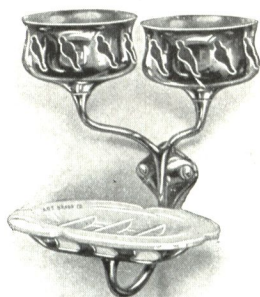


Plate 6854

Nickel-plated Combination with Opal
Soap Dish

Complete..... 2.55

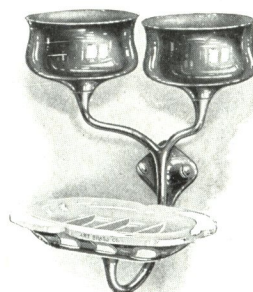


Plate 6855

Nickel-plated Combination with
Opal Soap Dish

Complete..... 2.55

Nickel-plated Brass Screws with all Wall Fixtures

Soap, Tumbler and Toothbrush Holders



Plate 6860

Nickel-plated Holder with
Opal Tumbler and Soap Dish
Each..... 2.00

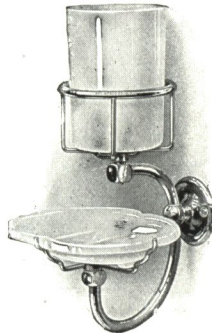


Plate 6861

Nickel-plated Holder with Opal
Tumbler and Soap Dish
Each..... 1.60



Plate 6862

Nickel-plated Holder and
Soap Dish and Opal Tumbler
Each..... 1.75



Plate 6863

Nickel-plated Holder with Opal
Tumbler and Soap Dish
Each..... 3.00



Plate 6864

Nickel-plated Holder with Opal
Tumbler and Soap Dish
Each..... 2.80

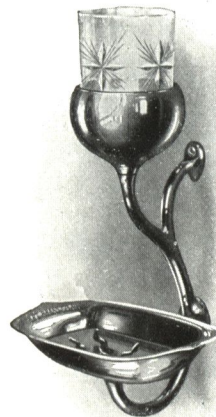


Plate 6865

Nickel-plated Holder and Soap
Dish and Glass Tumbler
Each..... 3.65



Plate 6866

Nickel-plated Cast Brass Tooth-
brush Holder for Three
Brushes
Each..... .30

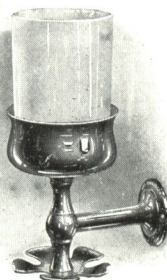


Plate 6867

Nickel-plated Holder with Opal
Tumbler and Toothbrush
Holder for Five Brushes
Complete..... 1.05
Less Tumbler..... .90



Plate 6868

Nickel-plated Cast Brass Tooth-
brush Holder for Six Brushes
and a Larger Brush
Each..... .50

Nickel-plated Brass Screws with all Wall Fixtures

Tumbler and Toothbrush Holders

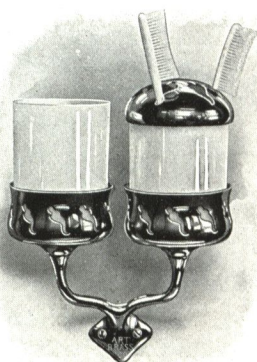


Plate 6870

Nickel-plated Holder with Two
Opal Tumblers and Nickel
Toothbrush Holder

Each, Less Brushes..... 2.35



Plate 6871

Nickel-plated Holder with
Opal Tumbler and Nickel
Toothbrush Holder

Each..... 1.40



Plate 6872

Nickel-plated Double Tumbler
and Toothbrush
Holder

Each..... 2.00

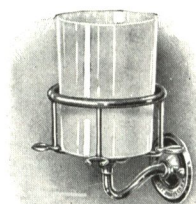


Plate 6873

Nickel-plated Tumbler and
Toothbrush Holder with
Opal Tumbler

Each..... .90

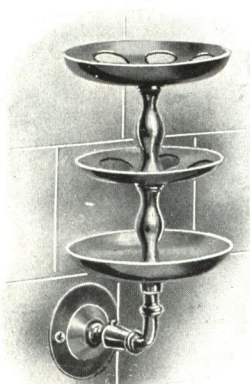


Plate 6874

Nickel-plated Toothbrush
Holder

Each..... 1.00



Plate 6875

Nickel-plated Tumbler and
Toothbrush Holder

Holder with Tumbler..... 1.30
Holder without Tumbler..... .85



Plate 6876

Nickel-plated Toothbrush Holder for Six Brushes

Size 9 x 1 3/4 inches, each..... .60



Plate 6877

Crystal Tumbler and
Nickel-plated Tooth-
brush Holder for Five
Brushes.

Tumbler and Holder,
Less Brushes..... .65
Holder only..... .50

Nickel-plated Brass Screws with all Wall Fixtures

Tumbler Holders

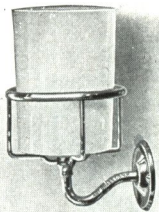


Plate 6880

Nickel-plated Holder
with
Opal Tumbler

Complete..... .65
Holder only..... .50

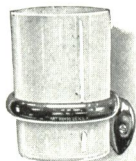


Plate 6881

Nickel-plated Cast
Brass Holder with Opal
Tumbler

Complete..... .90
Holder only..... .75

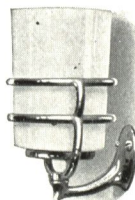


Plate 6882

Nickel-plated Cast
Brass Holder with Opal
Tumbler

Complete..... 1.50
Holder only..... 1.35



Plate 6883

Nickel-plated
Holder with Opal
Tumbler

Complete..... 1.05
Holder only..... .90



Plate 6884

Nickel-plated Holder
with Cut Glass
Tumbler

Complete..... 1.35
Holder only..... .90



Plate 6885

Nickel-plated Holder
with Cut Glass
Tumbler

Complete..... 1.35
Holder only..... .90

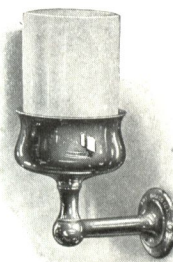


Plate 6886

Nickel-plated
Holder with Opal
Tumbler

Complete..... .80
Holder only..... .65



Plate 6887

Nickel-plated Holder
with Ring Hook and
Crystal Tumbler

Complete..... 1.15
Holder only..... 1.00

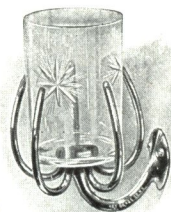


Plate 6888

Nickel-plated Holder with Cut
Glass Tumbler

Complete..... 1.60
Holder only..... 1.15

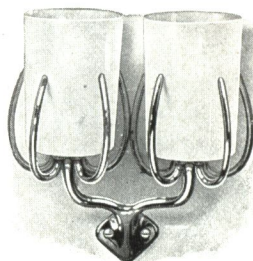


Plate 6889

Nickel-plated Double Holder
with Two Opal Tumblers

Complete..... 2.10
Holder only..... 1.80



Plate 6889A

Nickel-plated Cock Hole
Tumbler Holder with
Chain Stay

Each..... 1.00

Nickel-plated Brass Screws with all Wall Fixtures

Tumblers

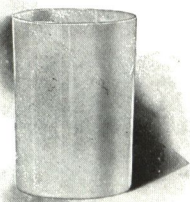


Plate 6890

Opal Tumbler

Each..... .15

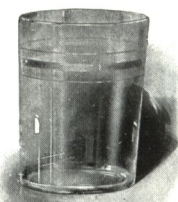


Plate 6891

Crystal Tumbler

Each..... .15

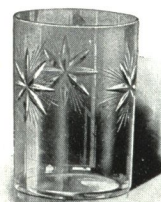


Plate 6892

Cut Glass Tumbler

Each..... .45

New Adjustable Holder

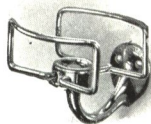


Plate 6893

Nickel-plated Adjustable Holder
for Toilet Articles

Each..... .60

Adjustment $2\frac{1}{2}$ to 4 inches

Set arms and lock them by a turn to right

Shaving Brush Holder

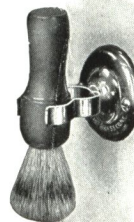


Plate 6894

Nickel-plated Shaving Brush
Holder

Each (Holder only)..... .25

Keeps brush clean and sanitary



Plate 6895

Nickel-plated Adjustable Shav-
ing Mug and Razor Strop
Holder

No Brush or Mug furnished.

Each..... .75



Plate 6896

Nickel-plated Adjustable Shav-
ing Mug and Brush
Holder

No Mug or Brush furnished

Each..... 1.10

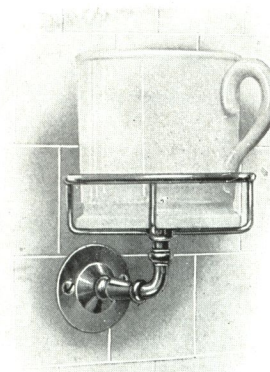


Plate 6897

Nickel-plated Shaving Mug
Holder with Plain
China Mug
With China Mug

Each..... 1.40

Nickel-plated Brass Screws with all Wall Fixtures

Bathroom Hooks



Plate 6900

Nickel-plated Cast
Brass Robe Hook

2 x 1 $\frac{3}{8}$ inches

Each..... .15



Plate 6901

Nickel-plated Cast
Brass Robe Hook

2 $\frac{1}{4}$ x 1 $\frac{1}{2}$ inches

Each..... .20



Plate 6902

Nickel-plated Cast
Brass Double
Robe Hook

1 $\frac{5}{8}$ x 1 $\frac{3}{4}$ inches

Each..... .30



Fig. 6903

Nickel-plated Cast
Brass Handy Hook

For razor strop, fountain
syringe, finger rings, toilet
paper, bath mat, and other
uses.

Each..... .15



Plate 6904

Nickel-plated Heavy Cast
Brass Robe Hook

3 $\frac{1}{8}$ x 2 $\frac{1}{2}$ inches

Each..... .30

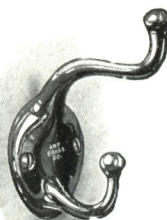


Plate 6905

Nickel-plated Large Cast
Brass Robe Hook

3 $\frac{3}{8}$ x 3 $\frac{7}{8}$ inches

Each..... .60

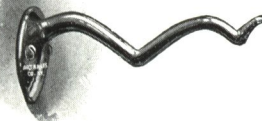


Plate 6906

Nickel-plated Cast Brass
Douche Bag Hook

4 $\frac{5}{8}$ x 2 $\frac{1}{8}$ inches

Each..... .50

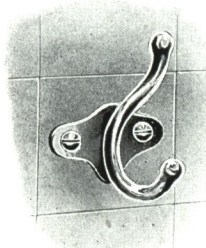


Plate 6907

Nickel-plated Single Robe
Hook

Each..... .22



Plate 6908

Nickel-plated Double Robe
Hook

Each..... .45

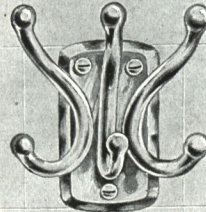


Plate 6909

Nickel-plated Triple Robe
Hook

Each..... .65

Nickel-plated Brass Screws with all Wall Fixtures

Coat and Hat Hooks



Plate 6910
Nickel-plated Coat and
Hat Hook

6 inches high, each..... .30

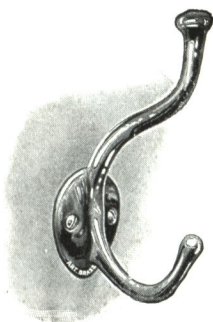


Plate 6911
Nickel-plated Coat and
Hat Hook

3 x 5 ⁷/₈ inches, each..... .60



Plate 6912
Nickel-plated Coat and
Hat Hook

3 ¹/₄ x 5 ³/₄ inches, each..... .60

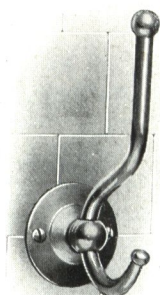


Plate 6913
Nickel-plated Coat and
Hat Hook

6 inches high, each..... .65

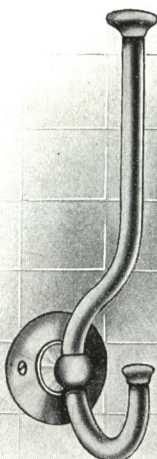


Plate 6914
Nickel-plated Coat and
Hat Hook

12 ¹/₂ inches high, each..... 1.90

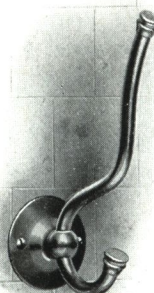


Plate 6915
Nickel-plated Coat and
Hat Hook

7 ³/₄ inches high, each..... .70

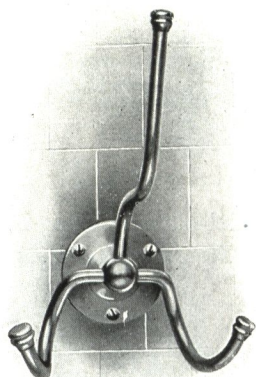


Plate 6916

Plate 6916
Nickel-plated Coat and
Hat Hook

8 ¹/₄ inches high, each..... .90

Plate 6917

Nickel-plated Coat and
Hat Hook

4 inches high, each..... .45

Nickel-plated Brass Screws with all Wall Fixtures

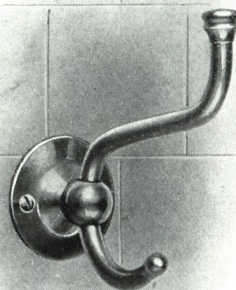


Plate 6917

Toilet Paper Holders

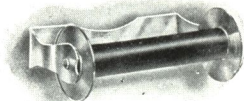


Plate 6920

Nickel-plated Paper Holder
with Ebonized Wood Roll

Each..... .50

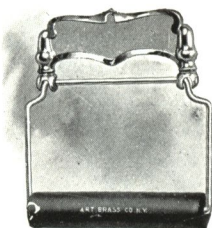


Plate 6921

Nickel-plated Paper Holder
with Ebonized Wood Roll

Each..... .30



Plate 6922

Nickel-plated Paper Holder
with Ebonized Wood Roll

Each..... 1.00

Locking Paper Holders

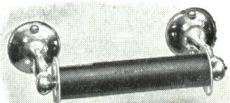


Plate 6923

Nickel-plated Cast Brass
Locking Paper Holder with
Ebonized Wood Roll

Each..... 1.00

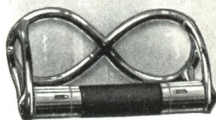


Plate 6924

Nickel-plated Cast Brass
Spring Locking Paper
Holder

Each..... 1.50

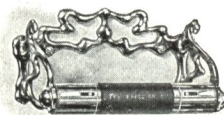


Plate 6925

Nickel-plated Cast Brass
Spring Locking Paper
Holder

Each..... 1.35

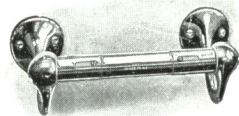


Plate 6926

Nickel-plated Cast Brass Spring
Locking All Metal Paper
Holder

Each..... 2.00



Plate 6927

Nickel-plated Cast Brass Extra
Strong All Metal Spring
Locking Paper Holder

Each..... 2.50

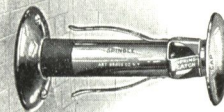


Plate 6928

Nickel-plated Spring Paper
Reel with Locking
Device

Each..... .85

Note: All our Spring Locking Paper Holders are arranged with concealed springs which prevent roller being removed until paper is all used.

Especially adapted for use in public buildings.

This holder delivers two sheets at a time and automatically rewinds after each delivery. Prevents waste of paper.

Nickel-plated Brass Screws with all Wall Fixtures

Toilet Paper Holders

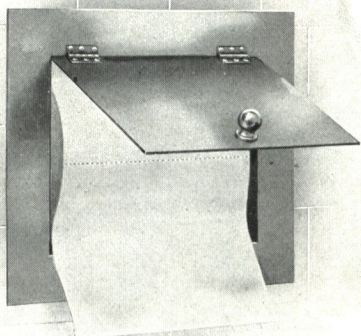


Plate 6930

Nickel-plated Recess Paper Holder
with Open Back for
Roll Paper

Fits a recess $5\frac{1}{4}$ by $5\frac{3}{4}$ inches, by 5 inches deep.
Front of frame, $6\frac{1}{2}$ x $7\frac{1}{2}$ inches over all

Each..... 7.00

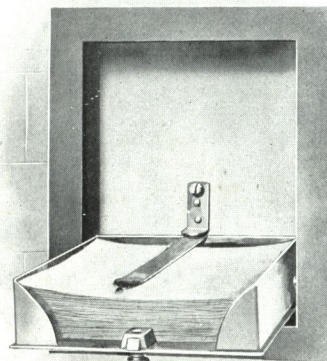


Plate 6931

Nickel-plated Recess Paper Holder with
Metal Back and Spring Clip to
Hold Sheet Paper

Fits a recess 7 by 9 inches by $2\frac{1}{2}$ inches deep.
Front of frame $8\frac{3}{8}$ x $10\frac{1}{2}$ inches over all.

Each..... 9.50

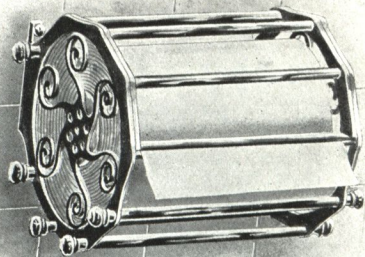


Plate 6932

Nickel-plated Fancy Enclosed Roll
Paper Holder

Each..... 4.00

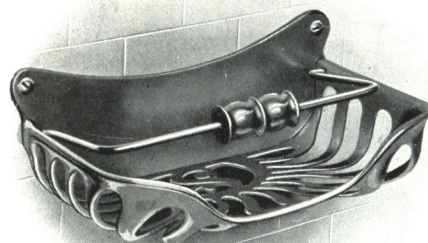


Plate 6933

Nickel-plated Cast Brass Open Paper Holder
with Movable Arm and Weight

Each..... 5.50

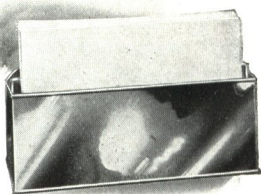


Plate 6934

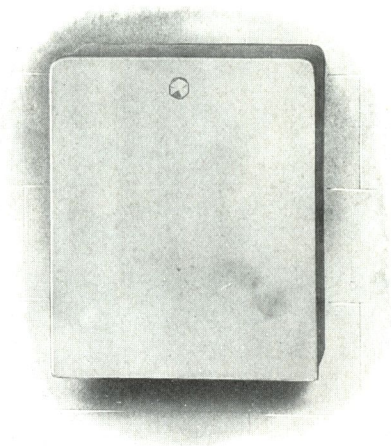
Plate 6934

Nickel-plated Paper Holder for Flat Sheets. Made to hang on wall
or stand on flat surface. Strong spring back of paper keeps it upright
until last sheet is used. Admits sheets up to $7\frac{1}{2}$ inches.

Each..... 1.50

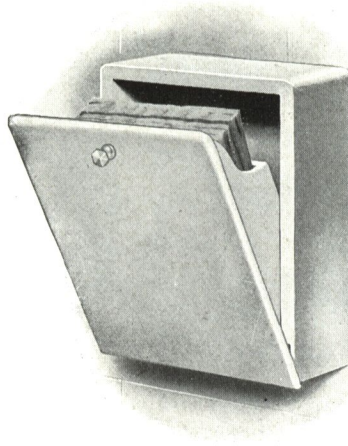
Nickel-plated Brass Screws with all Wall Fixtures.

Toilet Paper Holders



Closed

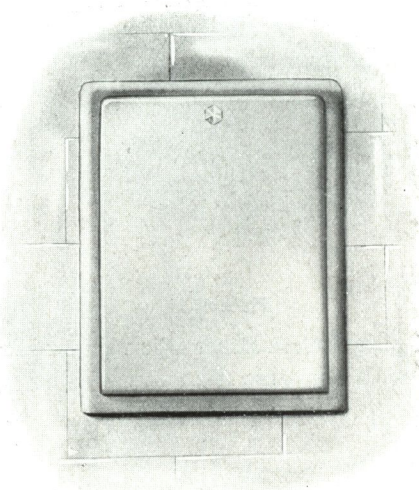
Plate 6940



Open

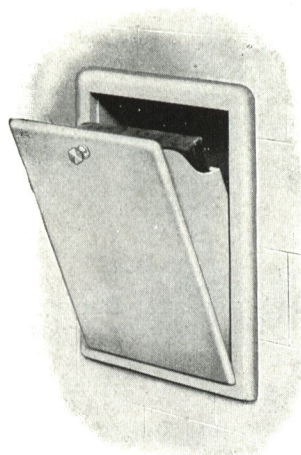
Nason Toilet Paper Holder for wall
 Finished in Semi-dull White Sanoid on Wood, Glass Knob
 Outside measurements $8\frac{3}{4} \times 6\frac{7}{8} \times 3$ inches

Price..... 4.00



Closed

Plate 6941



Open

Nason Toilet Paper Holder for Recess
 Finished in Semi-dull White Sanoid on Wood, Glass Knob

Made to fit recess $8\frac{5}{8} \times 6\frac{7}{8} \times 2\frac{1}{2}$ inches

Price..... 4.00

"Onliwon" Toilet Paper Cabinets

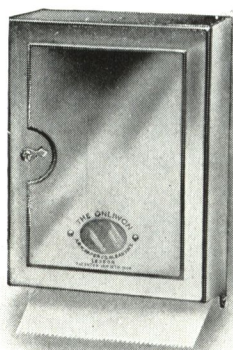


Plate 6950

The "Onliwon" Single Toilet Paper Cabinet Capacity 1000 Sheets

The "Onliwon" Cabinet is simple in construction; inexpensive; never gets out of order; and of handsome appearance.

Provided with lock and automatic indicator of contents.

Finished in either Nickel-plate or Black Enamel.

Price..... 1.50

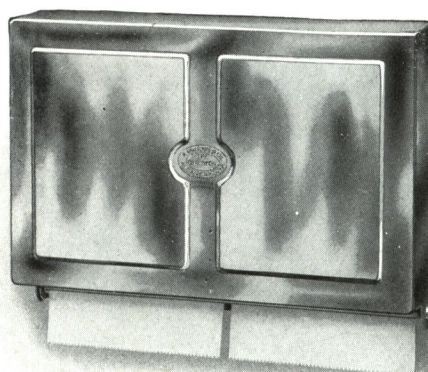


Plate 6951

The "Onliwon" Double Toilet Paper Cabinet Capacity 2000 Sheets

The absence of all mechanism, its 2000 sheet capacity; strength, excellent finish and appearance make this cabinet unrivalled for public service. Its duplex delivery is an infallible guard against an empty cabinet. Occupies little more space than cabinets of one-fourth its capacity.

Finished in either Nickel-plate or Black Enamel.

Price..... 2.60

Equally adapted for hotel or private use

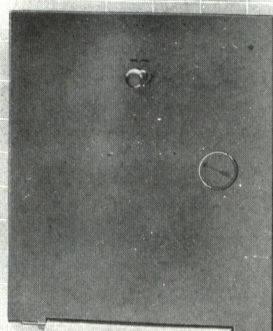


Plate 6952

The "Onliwon" Recess Paper Cabinet Capacity 1000 Sheets

Architects and builders will appreciate this cabinet as exactly meeting the requirements of the hotel, guest or private residence. Requires a recess in the wall only $2\frac{3}{8}$ inches deep, $7\frac{7}{8}$ inches high and $6\frac{1}{4}$ inches wide.

The front Solid Brass. Finished in either Nickel-plate or White Enamel.

Price..... 2.00

"Onliwon" Package

1000 Sheets

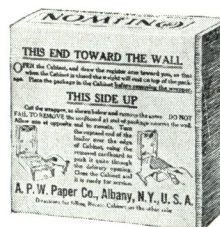


Plate 6953

"Onliwon" Package containing 1000 sheets of best quality paper ready for recharging cabinet.

Packed in carton containing 16 packages like above with 1000 sheets in each package.

Price per Carton (16,000 Sheets)..... 4.00

Sink Soap Dishes

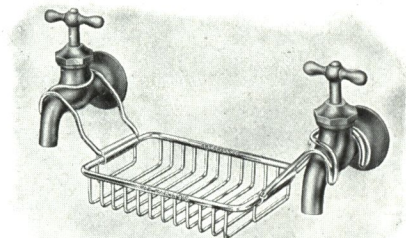


Plate 6960

Nickel-plated Brass Wire Sink Soap Dish

Size $4\frac{1}{4}$ x 6 inches

For Faucets 7 to $8\frac{1}{2}$ inches center to center, each..	.85
For Faucets $8\frac{1}{2}$ to 11 inches center to center, each..	.85
For Faucets 11 to 14 inches center to center, each..	.95

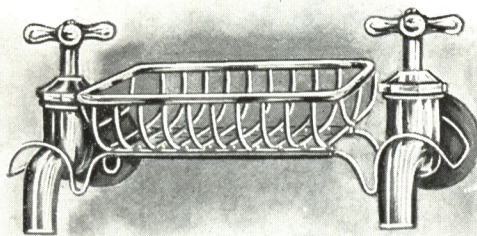


Plate 6961

Nickel-plated Brass Wire Sink Soap Dish
Adjustable to fit all Spreads of Sink FaucetsDish 6 inches long, $4\frac{1}{4}$ inches wide

Each.....	1.00
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Whisk Broom Holders

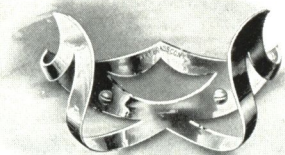


Plate 6962

Nickel-plated Brass Whisk Broom Holder

Each.....	.30
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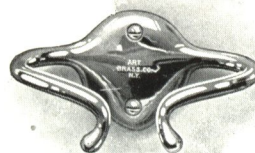


Plate 6963

Nickel-plated Cast Brass Whisk Broom Holder

Each.....	.60
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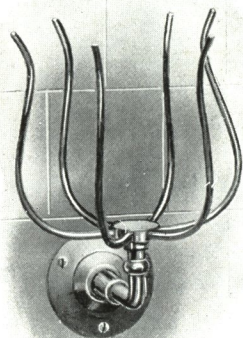


Plate 6964

Nickel-plated Brass Carafe
Holder

We do not supply the Carafe

Each.....	1.20
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Plate 6964

"Stronghold" Faucet Bulb



Plate 6965

Nickel-plated Brass Strong-
hold Faucet Bulb with Red
Rubber Grip.

Small, $\frac{1}{2}$ -inch, each.....	.30
Medium, $\frac{5}{8}$ -inch, each.....	.35
Large, $\frac{3}{4}$ -inch, each.....	.45

Nason China Tile-in Bath Room Accessories

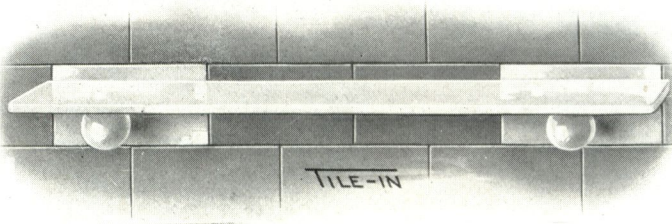


Plate 6970
Opal Shelf 5 inches wide, with China Brackets

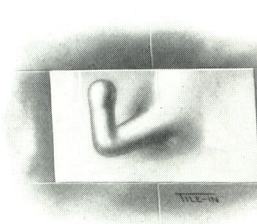


Plate 6971
China Robe Hook

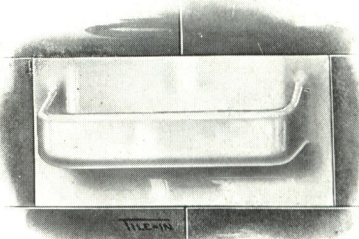


Plate 6972
China Soap Holder

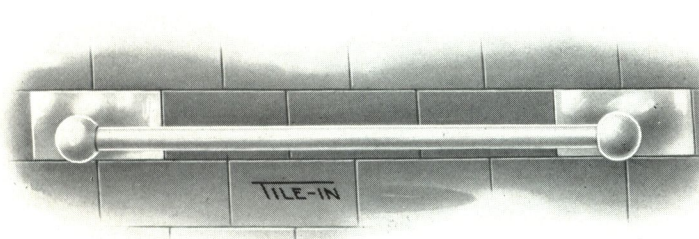


Plate 6973
1-inch Opal Towel Bar with China Brackets

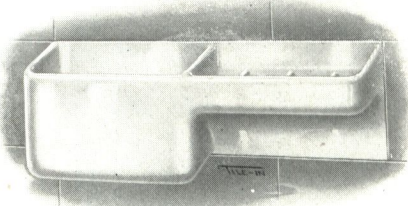


Plate 6974
China Soap and Sponge Holder

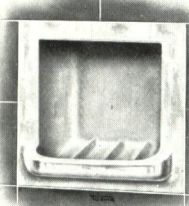


Plate 6975
China Recess Soap Holder

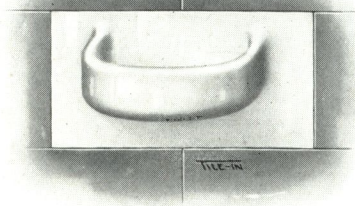


Plate 6976
China Tumbler Holder

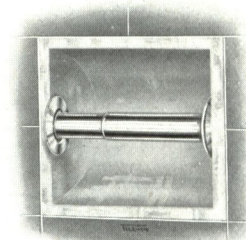


Plate 6977
China Recess Paper Holder

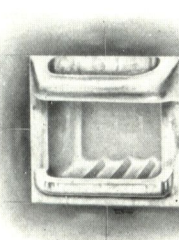


Plate 6978
China Combination Recess Soap
Holder and Grab Rail

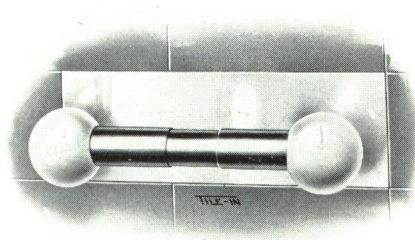


Plate 6979
China Paper Holder

Price List

	Each		Each
Plate 6970 Shelf with 6 x 3-inch Backs, 18 inches long. . . .	6.30	Plate 6973 Towel Bar with 6 x 3-inch Backs, 36 inches long. .	6.60
Plate 6970 Shelf with 6 x 3-inch Backs, 24 inches long. . . .	6.30	Plate 6974 Soap and Sponge Holder with 9 x 3-inch Back. .	3.00
Plate 6970 Shelf with 6 x 3-inch Backs, 30 inches long. . . .	6.90	Plate 6975 Recess Soap Holder with 6 x 6-inch Flange. . . .	3.00
Plate 6970 Shelf with 6 x 3-inch Backs, 36 inches long. . . .	7.50	Plate 6976 Tumbler Holder with 6 x 3-inch Back.	1.80
Plate 6971 Robe Hook, with 6 x 3-inch Back.	1.80	Plate 6977 Recess Paper Holder with 6 x 6-inch Flange. . . .	4.80
Plate 6972 Soap Holder with 6 x 3-inch Back.	1.80	Plate 6978 Combination Recess Soap Holder and Grab Rail	
Plate 6973 Towel Bar with 6 x 3-inch Backs, 18 inches long. .	5.40	with 6 x 6-inch Flange.	6.00
Plate 6973 Towel Bar with 6 x 3-inch Backs, 24 inches long. .	5.40	Plate 6979 Paper Holder with 9 x 3-inch Back.	4.80
Plate 6973 Towel Bar with 6 x 3-inch Backs, 30 inches long. .	6.00		

Towel Baskets

For Soiled Towels



Plate 6980

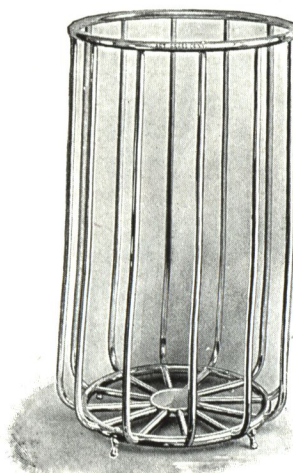
Nickel-plated Wall Towel
Basket

Plate 6981

Nickel-plated Round Floor
Towel Basket

No. 1.	6 x 8 x 11 inches, each.....	8.00	
No. 2.	6 x 12 x 16 inches, each.....	9.00	12 x 20 inches, each..... 9.00

Plate 6981A

Corner Basket
(Not illustrated)

Height, 15 inches; Width, 12 inches; Depth, 9 inches

Each.....	9.00
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Bath Tub Seats

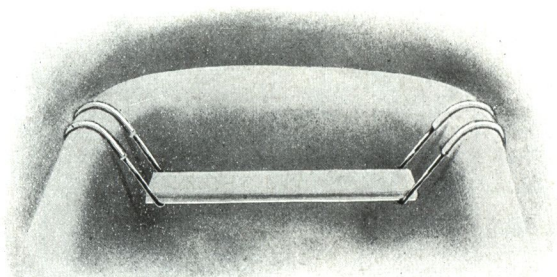


Plate 6982

Wood Bath Seat with Hanger of Heavy
Brass Rod covered with Rubber Tubing.

Polished Oak, 6 x 20½ inches, each.....	1.80
White Cellu-covered, 6 x 20½ inches, each.....	5.00

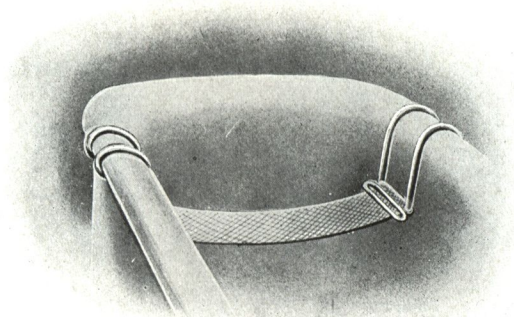


Plate 6983

Canvas Webbing Bath Seat or Head Rest,
with Hangers of Heavy Brass Rod covered with
Rubber Tubing.

Canvas Seat with Nickel-plated Trimmings.

5 x 20 inches, Adjustable, each	1.80
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Bath Stools

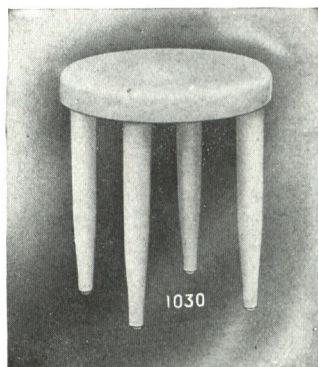


Plate 6990

Round Bath Stool

Top $13\frac{1}{2}$ inches diameter. Height $14\frac{1}{2}$ inches

Dull White Sanoid

Plain Top (as shown in cut).....	5.00
Natural Cork Top.....	5.50
White Cellu-covered.....	9.00

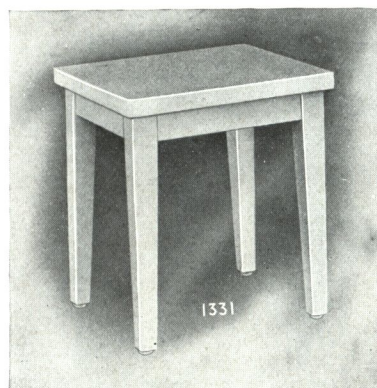


Plate 6991

Oblong Bath Stool

Top 14 x 12 inches. Height 15 inches

Dull White Sanoid

Plain Top.....	5.00
Natural Cork Top (as shown in cut).....	5.50

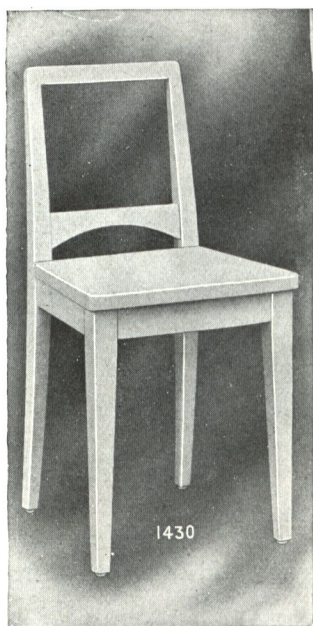


Plate 6992

Dull White Sanoid Demi-Chair

Seat 14 x 12 inches. Height of seat $16\frac{1}{2}$ inches. Height of Back $28\frac{1}{2}$ inches.

Plain Seat (as shown in cut).....	10.00
Natural Cork Seat.....	10.50



Plate 6993

Round Bath Stool with White Rubber Tips

Top $13\frac{1}{2}$ inches diameter. Height 16 inches

White Cellu-covered.....	9.00
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Mirrors

For Shaving and Dressing. Adjusts and Swivels in any Direction

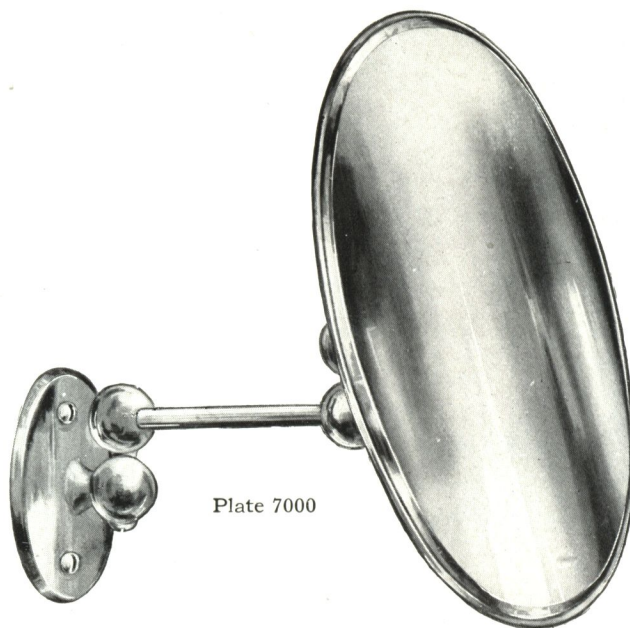


Plate 7000

Nason Adjustable Bevel Plate Glass Mirror with Nickel-plated
Brass Frame, Back and Bracket

Size, 7 x 9 inches.....	9.50
Size, 8 x 10 inches.....	10.00

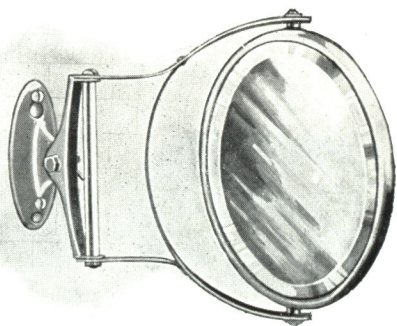


Plate 7001

Plain Mirror Only with Metal Back

6-inch Diameter.....	2.00
7-inch Diameter.....	2.50
8-inch Diameter.....	3.00

Plate 7002

Double Face, One Plain and One
Magnifying Mirror

6-inch Diameter.....	5.00
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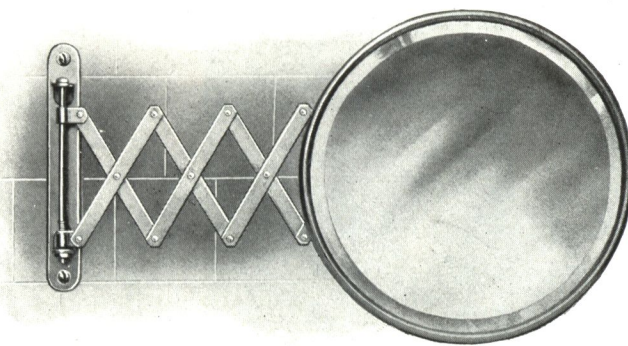


Plate 7003

Extension Shaving and Dressing Mirror

Adjusts and swivels in any direction
and extends to 24 inches
from the wall

8-inch Diameter.....	4.00
10-inch Diameter.....	4.80

Bath Room Mirrors

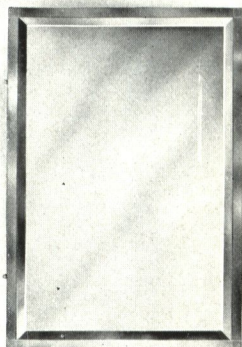


Plate 7010

Nickel-plated Brass Frame, $\frac{5}{8}$ inch wide
with Bright Metal Back

Size of Glass	
18 x 12 inches.....	6.50
20 x 14 inches.....	8.00
24 x 16 inches.....	10.00
28 x 20 inches.....	13.70
30 x 24 inches.....	17.00

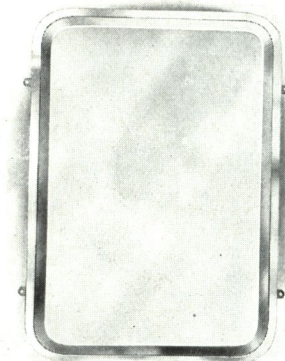


Plate 7011

Brass Frame Mirror
Plain Frame, $\frac{1}{2}$ inch wide

Size of Glass	N. P.	White
20 x 14 inches.....	8.50	9.30
24 x 18 inches.....	12.00	13.00

Beaded Frame, $\frac{5}{8}$ inch wide

20 x 14 inches.....	10.00	10.80
24 x 18 inches.....	13.70	14.70

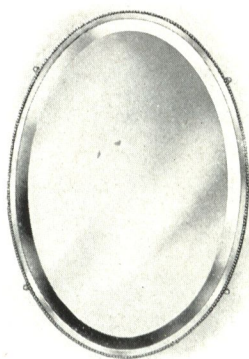


Plate 7012

Brass Frame Mirror
Beaded Frame

Size of Glass	N. P.	White
20 x 14 inches, $\frac{5}{8}$ -inch Frame.....	10.00	10.80
24 x 16 inches, $\frac{5}{8}$ -inch Frame.....	12.60	13.60
28 x 20 inches, $\frac{3}{4}$ -inch Frame.....	16.50	18.00

Plain Frame

20 x 14 inches, $\frac{1}{2}$ -inch Frame.....	8.20	9.00
24 x 16 inches, $\frac{1}{2}$ -inch Frame.....	10.50	11.50
28 x 20 inches, $\frac{5}{8}$ -inch Frame.....	14.30	15.80



Plate 7013

Brass Frame Mirror
Beaded Frame

Size of Glass	N. P.	White
18 inches Diameter, $\frac{5}{8}$ -inch Frame....	11.50	12.50
22 inches Diameter, $\frac{5}{8}$ -inch Frame....	15.40	16.50
26 inches Diameter, $\frac{3}{4}$ -inch Frame....	19.80	21.40

Plain Frame

18 inches Diameter, $\frac{1}{2}$ -inch Frame....	10.00	11.00
22 inches Diameter, $\frac{1}{2}$ -inch Frame....	13.20	14.30
26 inches Diameter, $\frac{5}{8}$ -inch Frame....	17.00	18.60

Bath Room Mirrors

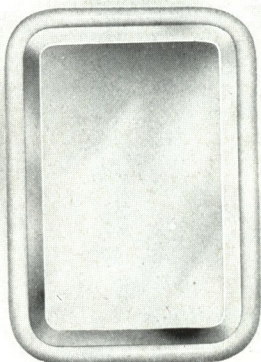


Plate 7020

White Frame Mirror

Size of Glass Inches	Width of Frame Inches	Polished Sanoid	Pyratoid
18 x 12	1	4.90	5.80
20 x 14	1 $\frac{1}{4}$	6.20	7.00
24 x 16	1 $\frac{3}{8}$	8.00	9.50
28 x 18	1 $\frac{1}{2}$	10.50	12.00
30 x 20	1 $\frac{1}{2}$	12.00	13.50

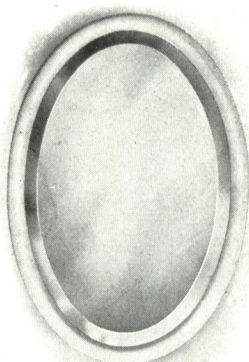


Plate 7021

White Frame Mirror

Size of Glass Inches	Width of Frame Inches	Polished Sanoid	Pyratoid
18 x 12	1	4.90	5.80
20 x 14	1 $\frac{1}{4}$	6.20	7.00
24 x 16	1 $\frac{3}{8}$	8.00	9.50
28 x 18	1 $\frac{1}{2}$	10.50	12.00
30 x 20	1 $\frac{1}{2}$	12.00	13.50

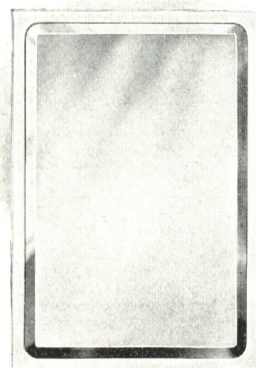


Plate 7022

White Frame Mirror

Size of Glass Inches	Width of Frame Inch	Semi-Dull Sanoid
18 x 12	1	5.90
20 x 14	1	7.20
24 x 16	1	9.00

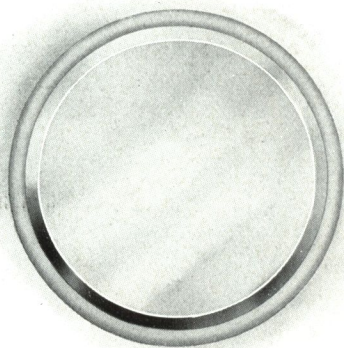


Plate 7023

White Frame Mirror

Size of Glass Inches	Width of Frame Inches	Polished Sanoid	Pyratoid
18	1	6.60	8.00
22	1 $\frac{1}{8}$	9.30	11.00
26	1 $\frac{3}{8}$	13.70	16.00

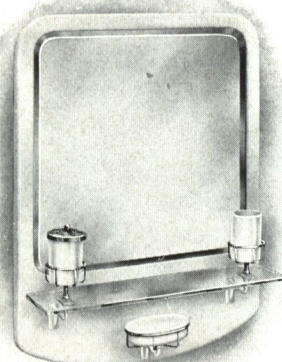


Plate 7024

Combination Set

Semi-Dull White Sanoid with Seamless Front (no joints to crack). Complete with Fittings as shown in cut.

Outside Measurements Inches	Size of Mirror Inches	
29 $\frac{1}{4}$ x 16 $\frac{1}{4}$	20 x 14	15.00
29 $\frac{1}{4}$ x 22 $\frac{1}{4}$	20 x 20	17.50

Toilet Mirrors

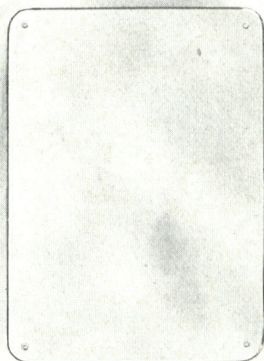


Plate 7030

Frameless Mirror

Polished edge French plate glass, with screws fitted with a neat nickel-plated cap.

Size of Glass

20 x 16 inches.....	5.50
24 x 16 inches.....	6.00
24 x 18 inches.....	7.00
30 x 20 inches.....	9.00

Special sizes made to order.

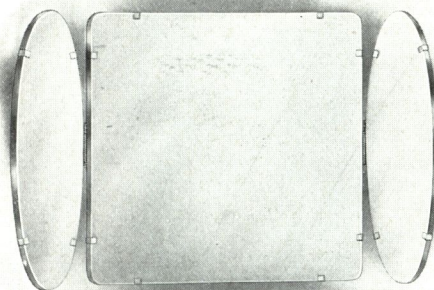


Plate 7031

TriPLICATE Mirror

A very swell triPLICATE. Polished edge French mirror plates. Nickel-plated trimmings.

Size of Glass, Inches

Center	Wings	Semi-Dull Sanoid	Pyralloid
14 x 14	14 x 10	15.00	20.00
20 x 20	20 x 14	27.50	34.00
24 x 24	24 x 18	39.50	48.00

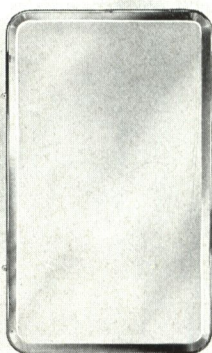


Plate 7032

Nickel-plated Brass Frame

An exceptionally neat article. Band $\frac{5}{16}$ inch wide, nickel-plated brass, with bright metal back.

Size of Glass

20 x 14 inches.....	8.20
24 x 18 inches.....	11.50
28 x 20 inches.....	15.40

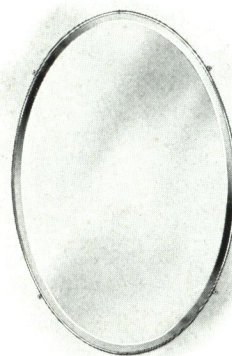


Plate 7033

Nickel-plated Brass Frame

An exceptionally neat article. Band $\frac{5}{16}$ inch wide, nickel-plated brass, with bright metal back.

Size of Glass

20 x 14 inches.....	8.20
24 x 18 inches.....	11.50
28 x 20 inches.....	15.40

Medicine Cabinets

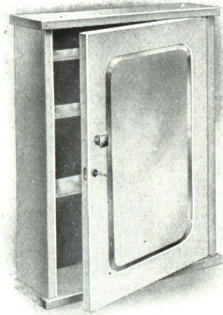


Plate 7040

Medicine Cabinet

Nickel-plated trimmings and plate glass shelves. Door has seamless front (no joints to crack).

Round corner or oval mirror in door.

Outside Measurements	Semi-Dull Sanoid	Pyraloid
19 x 15 $\frac{3}{4}$ x 5 $\frac{3}{4}$ inches.....	11.00	16.50
23 x 17 $\frac{3}{4}$ x 5 $\frac{3}{4}$ inches.....	13.50	19.50
25 x 19 $\frac{3}{4}$ x 5 $\frac{3}{4}$ inches.....	17.00	26.00

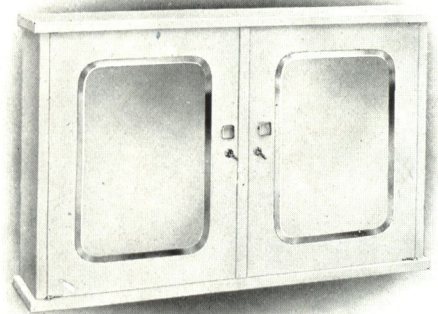


Plate 7041

Double Door Medicine Cabinet

Nickel-plated trimmings and plate glass shelves. Doors have seamless front (no joints to crack). Outside measurements, 29 $\frac{7}{8}$ x 19 x 5 $\frac{3}{4}$ inches.

	Semi-Dull Sanoid
Panel Doors.....	18.00
Round Corner Mirrors, 14 x 10 inches.....	22.00
Oval Mirrors, 14 x 10 inches.....	22.00

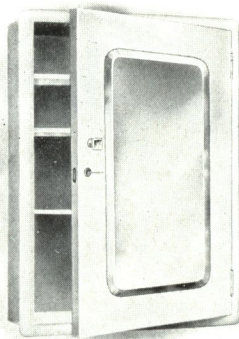


Plate 7042

Wood Recess Medicine Cabinet

Nickel-plated trimmings and plate glass shelves. Door has seamless front (no joints to crack). To fit recess 23 x 17 x 4 $\frac{5}{8}$ inches.

	Semi-Dull Sanoid	Pyraloid
Panel Door.....	12.00	17.00
Round Corner Mirror.....	14.50	19.50
Oval Mirror.....	14.50	19.50

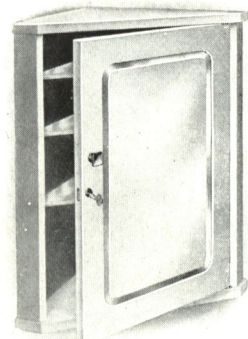


Plate 7043

Corner Medicine Cabinet

Nickel-plated trimmings and plate glass shelves. Door has seamless front (no joints to crack). Outside measure 23 inches high by 14 inches on each wall.

	Semi-Dull Sanoid	Pyraloid
Panel Door.....	14.00	19.00
Round Corner Mirror.....	16.50	21.50
Oval Mirror.....	16.50	21.50

Medicine Cabinets

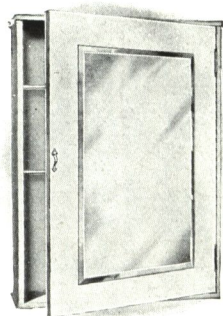


Plate 7050

Wood Medicine Cabinet

White enamel on wood, with two plate glass shelves, and bevel French mirror in door. Nickel-plated trimmings.

Outside Measurements	Size of Mirror	
19 x 15 $\frac{1}{4}$ x 4 $\frac{3}{4}$ inches	14 x 10 inches.....	7.50
23 x 15 $\frac{1}{4}$ x 4 $\frac{3}{4}$ inches	18 x 10 inches.....	9.50

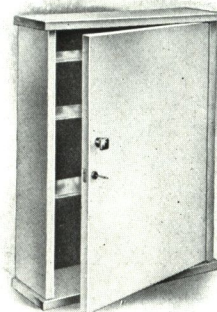


Plate 7051

Wood Medicine Cabinet

Made of hard wood, with panel door. No mirror, with glass knob, three plate glass shelves. Nickel-plated trimmings.

Outside Measurements	Semi-Dull Sanoid	Pyraloid
19 x 15 $\frac{3}{4}$ x 5 $\frac{1}{4}$ inches.....	9.00	14.00
23 x 17 $\frac{3}{4}$ x 5 $\frac{3}{4}$ inches.....	11.00	17.00
25 x 19 $\frac{3}{4}$ x 5 $\frac{3}{4}$ inches.....	13.50	22.50

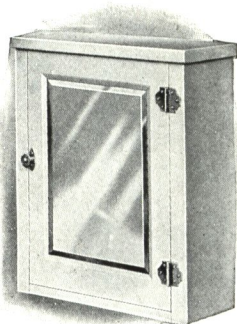


Plate 7052

Steel Medicine Cabinet

White enamel, with white steel shelf and bevel French mirror in door. Nickel-plated trimmings.

Outside Measurements	Size of Mirror	
17 x 17 x 5 $\frac{7}{8}$ inches	10 x 12 inches.....	8.00

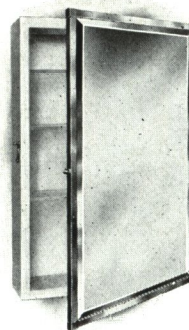


Plate 7053

Medicine Cabinet

Door has nickel-plated brass frame and trimmings. Cabinet is wood with Semi-Dull White Sanoid finish and three plate glass shelves.

Outside Measurements	Size of Mirror	
24 $\frac{5}{8}$ x 16 $\frac{5}{8}$ x 5 $\frac{1}{4}$ inches	24 x 16 inches.....	22.00

Recess Medicine Cabinets

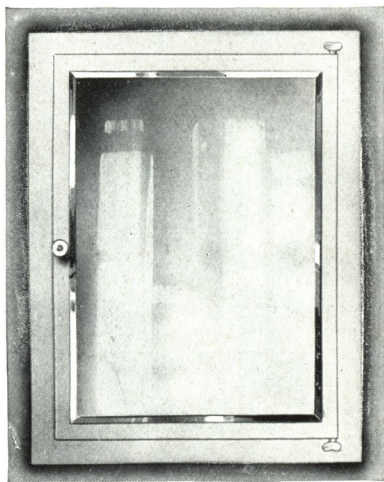


Plate 7060

White Steel Recess Medicine Cabinet with Bevel Mirror in Door and two Glass Shelves

No.	Size of Recess Inches	Over All Size Inches	Size of Mirror Inches	Price Each
1	23½ x 29½	25¾ x 31¾	20 x 26	32.00
2	18¼ x 28	20½ x 30½	16 x 26	20.00
3	18¼ x 24	20½ x 26½	16 x 22	16.00
4	14¼ x 24	15¼ x 25½	12 x 22	15.00
5	14¼ x 20	15½ x 21½	12 x 18	12.00

Depth of recess required, 3¾ inches.

Note: No. 3 Cabinet can be furnished with Round Corner Flange at same price.

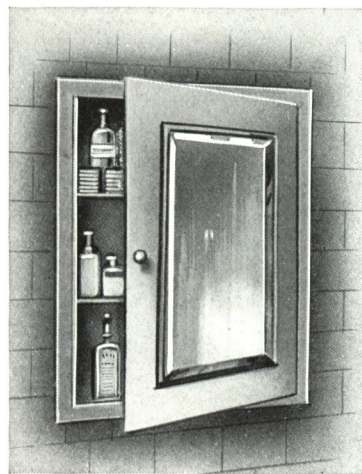


Plate 7061

White Enamel Steel Medicine Cabinet with Bevel Mirror in Door and three Glass Shelves

No.	Size of Recess Inches	Over All Size Inches	Size of Mirror Inches	Price Each
11	26 x 32	28 x 34	20 x 26	22.00
12	24 x 30	26 x 32	18 x 24	20.00
13	22 x 28	24 x 30	16 x 22	18.00
14	20 x 26	22 x 28	14 x 20	16.00
15	18 x 24	20 x 26	12 x 18	15.00

Depth of recess required, 4¾ inches.

Note: Cabinets with Oval Mirror in door furnished at same price.

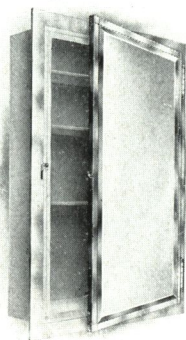


Plate 7062

Recess Medicine Cabinet

Nickel-plated door frame and flange. Cabinet fitted with plate glass shelves and made to fit recess 24¾ x 16¾ x 4⅝ inches.

24 x 16 inches. Bevel French Mirror in Door.... 36.00

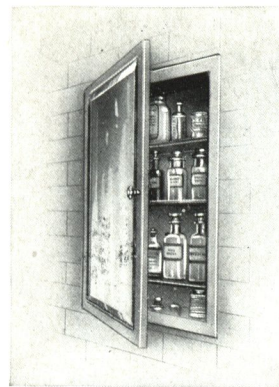


Plate 7063

White Enameled Steel Medicine Cabinet with Bevel Mirror in door. Invisible hinges and three glass shelves.

Size 20 x 26 inches outside. Recess 17¾ x 23¾ x 4 inches.
Each..... 30.00

Nason Bath Room Scales

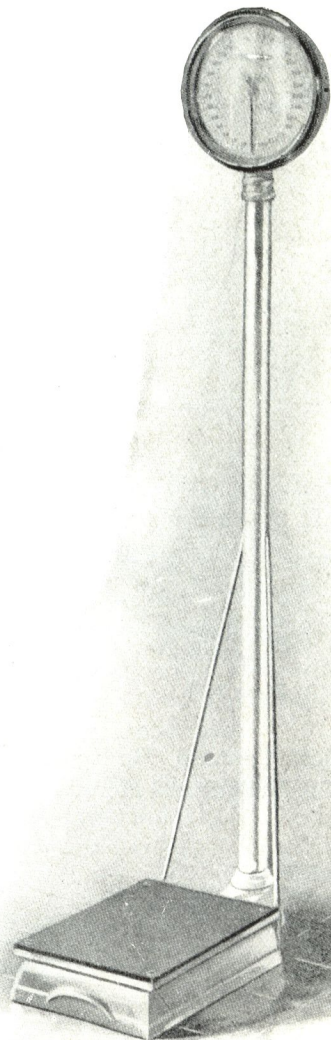


Plate 7070

Plate 7070

Bath Room Scale, White Enameled, with Cork
Mat on Platform..... 44.50

Same with Nickel-plated Standard and White
Enameled Base..... 53.00

Base, 22 x 11 inches; Platform, 14 x 11 inches;
Height, 66 inches.

Plate 7071

Bath Room Scale, White Enameled, with
Nickel-plated Sliding Measuring Rod..... 53.00

Same with Nickel-plated Standard and White
Enameled Base and Nickel-plated Sliding
Measuring Rod..... 62.00

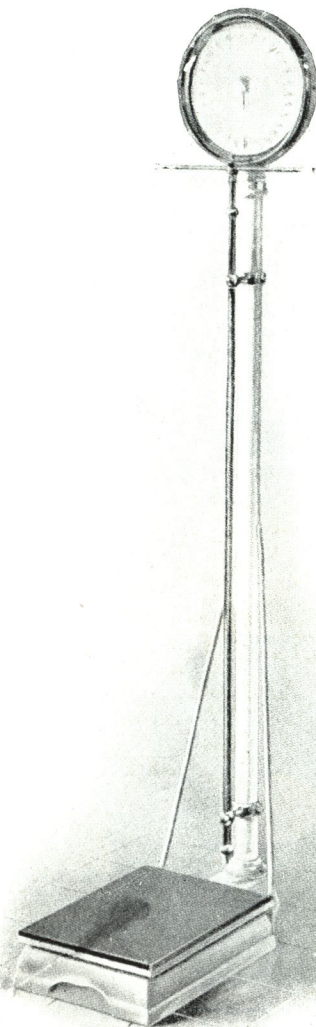


Plate 7071

Nason Cantslip Bath Mats

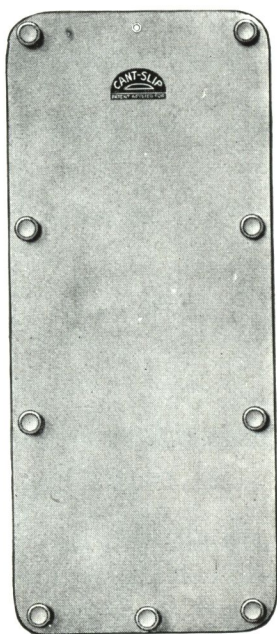


Plate 7080



Plate 7081

Nason Improved Cantslip Bath Mat with Vacuum Cups. Nickel-plated Mat Hanger and Hook.

Size 30 x 15 inches, each.....	3.00
Size 36 x 15 inches, each.....	3.55
Size 42 x 15 inches, each.....	4.25
Size 36 x 18 inches, each.....	4.50
Size 42 x 18 inches, each.....	5.15

Nason Regular Cantslip Bath Mat with Nickel-plated Mat Hanger and Hook.

Size 30 x 15 inches, each.....	2.60
Size 36 x 15 inches, each.....	3.00
Size 42 x 15 inches, each.....	3.40
Size 48 x 15 inches, each.....	3.75
Size 36 x 18 inches, each.....	4.15
Size 42 x 18 inches, each.....	4.75
Size 48 x 18 inches, each.....	5.35



Plate 7082

Nason Cantslip Mats
for Shower
Receptors

Plate 7082-7083

Round or Square

Size 24 x 24 inches, each.....	3.15
Size 27 x 27 inches, each.....	4.00
Size 30 x 30 inches, each.....	4.90



Plate 7083

Nason Cantslip Bath and Receptor Mats are made of fine white rubber, with special finished surface which grips the bottom of the tub and prevents slipping.

Nason Porcelain Shower Receptors

Plate 7090

Solid Porcelain Shower Receptor, glazed inside and outside, for tiling into straight wall, with Nickel-plated Waste Strainer and Connection.

Dimensions

Along wall, inches.....	36
Distance from back to front, inches.....	42
Outside diameter, inches.....	42
Depth inside, inches.....	7½

Price

As described, Class A.....	99.00
As described, Class B.....	71.00



Plate 7090

Plate 7091

Solid Porcelain All Roll Rim Round Shower Receptor, glazed inside and outside, for tiling into floor only, with Nickel-plated Waste Strainer and Connection.

Dimensions

Outside diameter, inches.....	42
Depth inside, inches.....	7½

Price

As described, Class A.....	99.00
As described, Class B.....	71.00

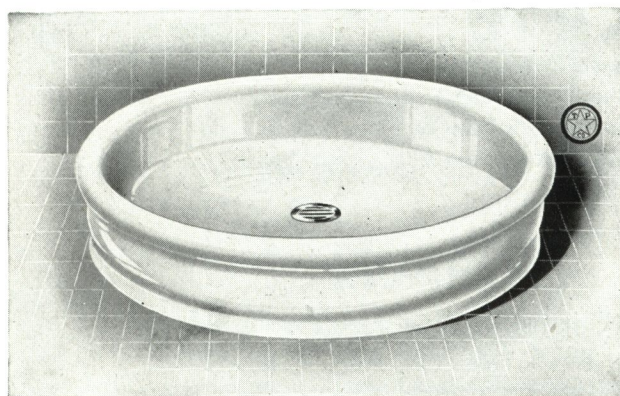


Plate 7091

Plate 7092

Solid Porcelain Shower Receptor, glazed inside and outside, for tiling into corner, with Nickel-plated Waste Strainer and Connection.

Dimensions

No.....	1	2
Length along sides, inches.....	28	34
From corner to front, inches.....	43½	50
Depth inside, inches.....	7½	7½

Price

As described, Class A.....	80.00	101.00
As described, Class B.....	58.00	71.00



Plate 7092

Nason Porcelain Shower Receptors

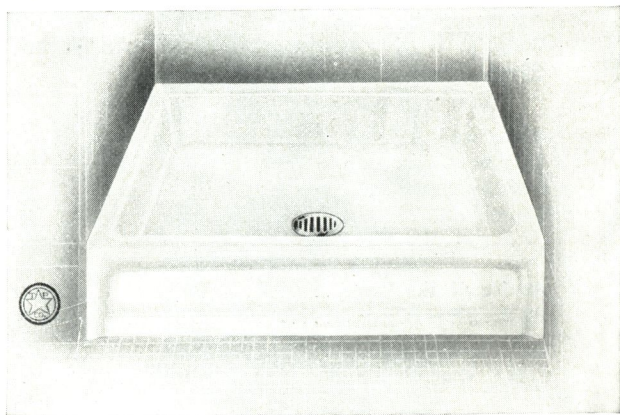


Plate 7100

Plate 7100

Solid Porcelain Shower Receptor, glazed inside and outside, for tiling into recess, with Nickel-plated Waste Strainer and Connection.

No.....	1	2
Size outside, inches.....	36 x 36 x 9	42 x 42 x 9
Depth inside, inches.....	7½	7½
As described, Class A.....	56.50	99.00
As described, Class B.....	47.50	71.00

Plate 7101

Solid Porcelain Square Pattern Shower Receptor, glazed inside and outside, for tiling into corner, with Nickel-plated Waste Strainer and Connection.

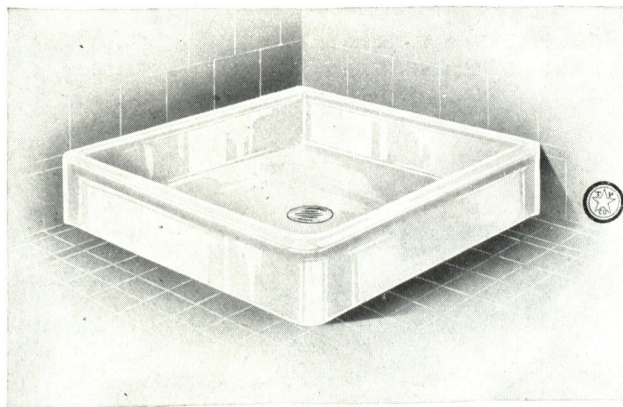


Plate 7101

No.....	1	2
Length along sides, inches.....	31 x 31	36 x 36
Depth inside, inches.....	6½	6½
As described, Class A.....	80.00	101.00
As described, Class B.....	58.00	71.00
From corner to front, inches.....	42	49

Nason Porcelain Enameled Iron Receptors

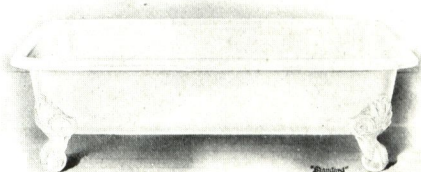


Plate 7110

Plate 7110

Porcelain Enameled Iron Shower Receptor, on Claw Feet, with Nickel-plated Brass Waste Strainer and Coupling.

Sizes, inches.....	36 x 36	42 x 42
Price as described.....	39.00	55.00
If with No. 1 Zinc White Exterior Finish, add.....		7.00
If with No. 2 Zinc White Exterior Finish, add.....		5.00

Plate 7111

Porcelain Enameled Iron Shower Receptor on Base, with Nickel-plated Brass Waste Strainer and Coupling.

Sizes, inches.....	36 x 36	42 x 42
Price as described.....	51.00	70.50
If with No. 1 Zinc White Exterior Finish, add.....		7.00
If with No. 2 Zinc White Exterior Finish, add.....		5.00

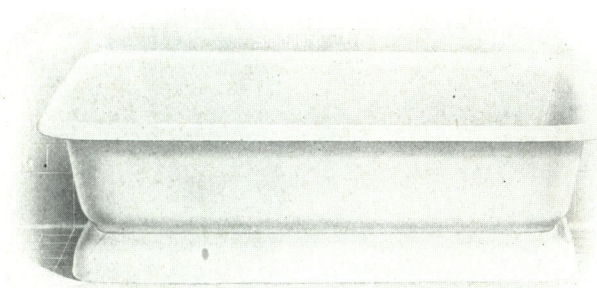


Plate 7111

Plate 7112

Porcelain Enameled Iron Shower Receptor, with Roll Rim and Apron to floor, Nickel-plated Brass Waste Strainer and Coupling.

Size, inches.....	38 x 38
Price as described.....	60.00

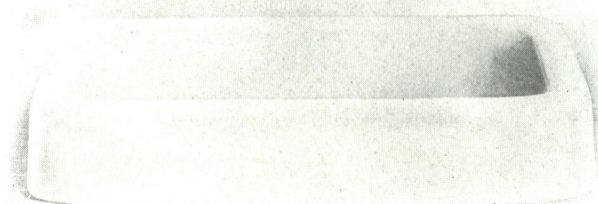


Plate 7112

Plate 7113

Porcelain Enameled Iron Round Front Shower Receptor with Roll Rim and Apron to floor, for tiling into corner, with Nickel-plated Brass Waste Strainer and Coupling.

Size, inches.....	42
Diameter inside, inches.....	36
Length along wall line, inches.....	39
Price as described.....	65.00

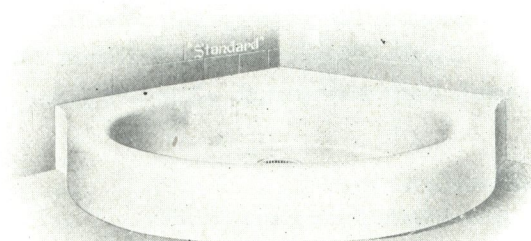


Plate 7113

Nason Needle and Shower Bath

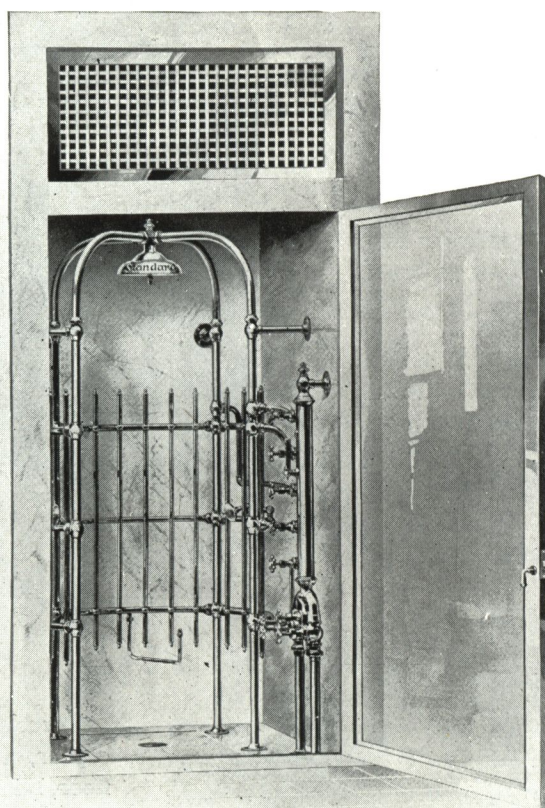


Plate 7120

Nason Nickel-plated Brass Combination Circular Needle and Shower Bath, with Tubular Head Shower, Douche, Liver Spray and Bidet, Large Mixing and Distributing Column with Thermometer, 1½-inch Supply Pipes to floor with Check Valves, Separate Six-ball China Index Controlling Valves for each feature enumerated.

Shower only as described.....	750.00
Nickel-plated Waste Strainer and Coupling.....	3.50

Price does not include Marble Floor Slab.

Plate Glass Door with Metal Frame, Handle and Catch and Ventilating Grill as shown can also be furnished to order.
Price on application.

Nason Needle and Shower Bath

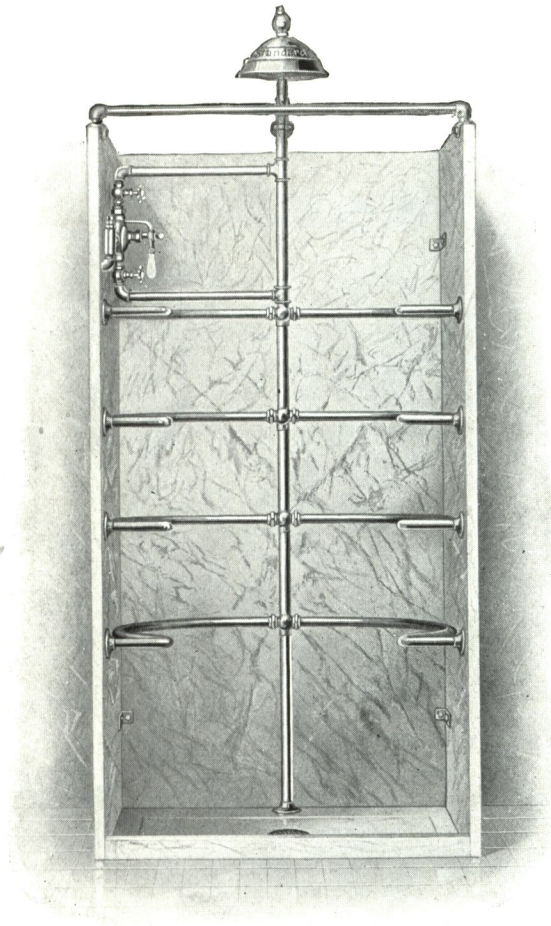


Plate 7130

Nason Nickel-plated Combination Circular Needle and Shower Bath for Marble Stall, with Tubular Head Shower, Anti-Scalding Mixing Valve with China Lever Handle, $\frac{3}{4}$ -inch Supply Pipes to wall with Check Valves, Separate Six-ball China Index Controlling Valves for Needle and Head Shower.

Shower only, as described	170.00
Add for Nickel-plated Curtain Rod, Duck Curtain and Pins	10.00
Add for Nickel-plated Waste Strainer and Coupling	3.50

Size of Stall 38 x 38 inches.

Price of Marble on application.

Nason Shower Bath

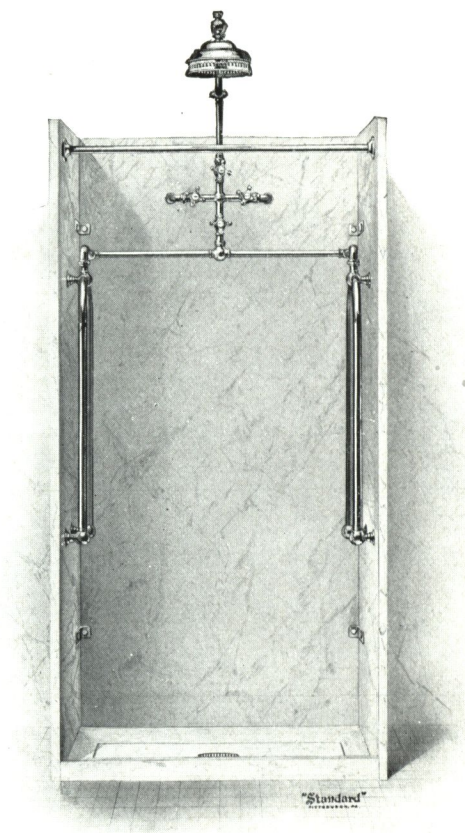


Plate 7140

Nason Nickel-plated Double Horseshoe Needle Bath for Marble Stall, with 8½-inch Tubular Head Shower, ½-inch Supply Pipes to wall with Check Valves, Four China Index Controlling Valves.

Shower only as described.....	80.00
Add for Nickel-plated Curtain Rod, with Duck Curtain and Pins	10.00
Add for Nickel-plated Waste Strainer and Coupling	3.50

Size of Stall 38 x 38 inches.

Price of Marble on application.

Nason Shower Bath

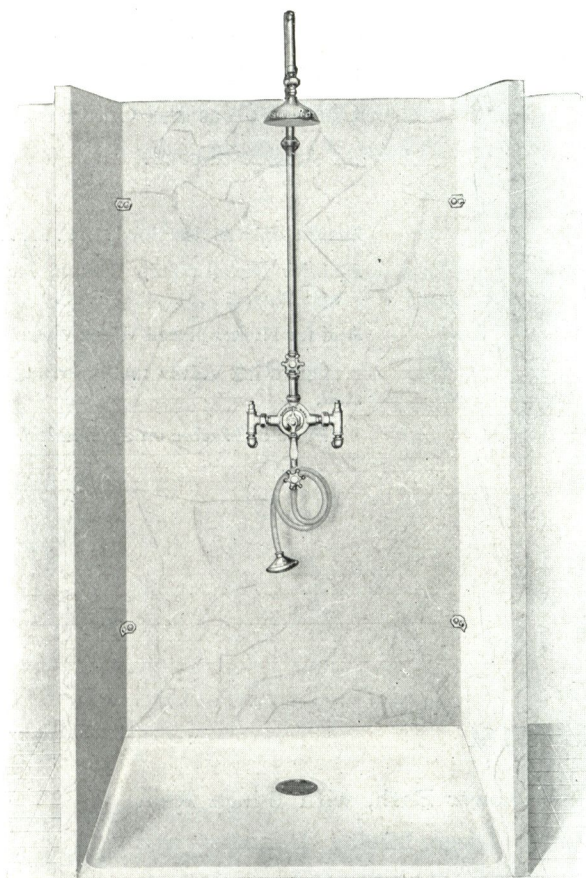


Plate 7150

Nason Nickel-plated Brass Shower Bath for Stall, with Goose Neck and 5-inch Cast Brass Adjustable Ball Joint Rain Head Shower, Anti-scalding Mixing Valve, with Check Valves and China Handle, Two China Index Controlling Valves, Shampoo Attachment with Rubber Hose and Spray.

Shower as described 45.50

Price of special Floor Receptor and Marble Stall as shown, on application.

Nason Shower Baths

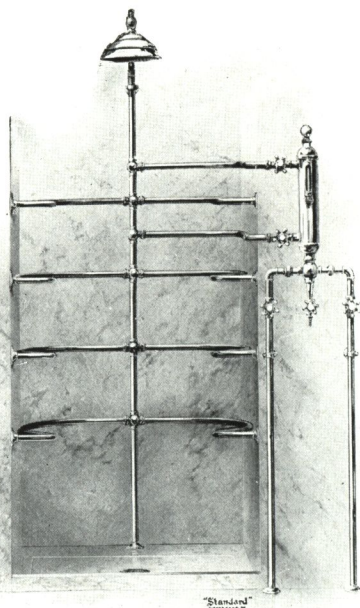


Plate 7160

Plate 7160

Nason Nickel-plated Brass Combination Circular Needle and Shower Bath for Marble Stall, with Tubular Head Shower, Large Mixing Chamber, Thermometer and Shampoo Attachment, $\frac{3}{4}$ -inch Supply Pipes with Check Valves and China Index Control Valves arranged on outside of stall.

Shower only as described.....	220.00
Add for Nickel-plated Curtain Rod with Duck Curtain and Pins.....	10.00
Add for Nickel-plated Waste Strainer.....	3.50

Operating Valves can be arranged for right or left hand side of stall.

Price of Marble on application.

Plate 7161

Nason Nickel-plated Brass Shower Bath, with 6-inch Rain Shower Head with Air Valve, Large Mixing Chamber and Thermometer, Four China Index Control Valves, $\frac{1}{2}$ -inch Supply Pipes to wall with Check Valves, Shampoo Attachment with Rubber Hose and Spray.

Shower as described.....	57.00
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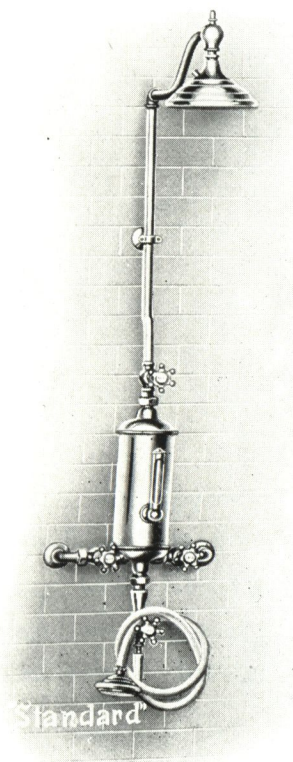


Plate 7161

Nason Shower Baths

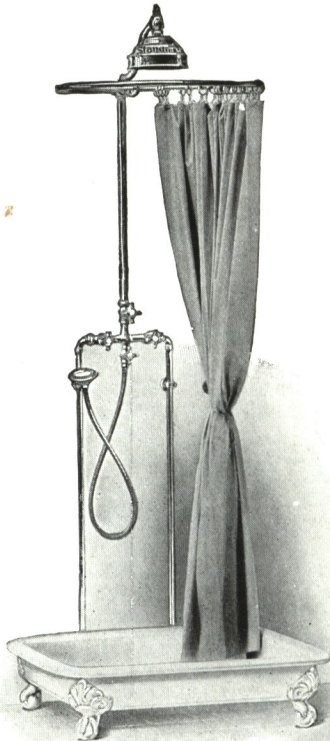


Plate 7170

Plate 7170

Nickel-plated Brass Shower Bath with 8½-inch Tubular Head Shower, ½-inch Supply Pipes to floor with Check Valves, Shampoo Attachment with Rubber Hose and Spray, Four China Index Controlling Valves, 24-inch Curtain Ring, Duck Curtain, Pins and Chain to hold Curtain back when not in use.

Shower as described 52.00

Note: Porcelain Enameled Iron Receptor, as shown is Plate 7110 on page 711, and is not included in above price.

Plate 7171

Nickel-plated Brass Shower Bath with 5-inch Rain Head Shower with Air Vent, ½-inch Supply Pipes to floor with Check Valves, Shampoo Attachment with Rubber Hose and Spray, Four China Index Controlling Valves, 24-inch Curtain Ring, Duck Curtain, Pins and Chain to hold back Curtain when not in use.

Shower as described 46.00

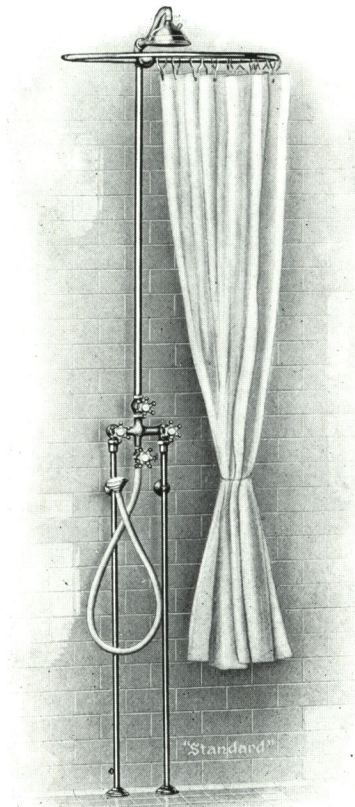


Plate 7171

Nason Shower Baths

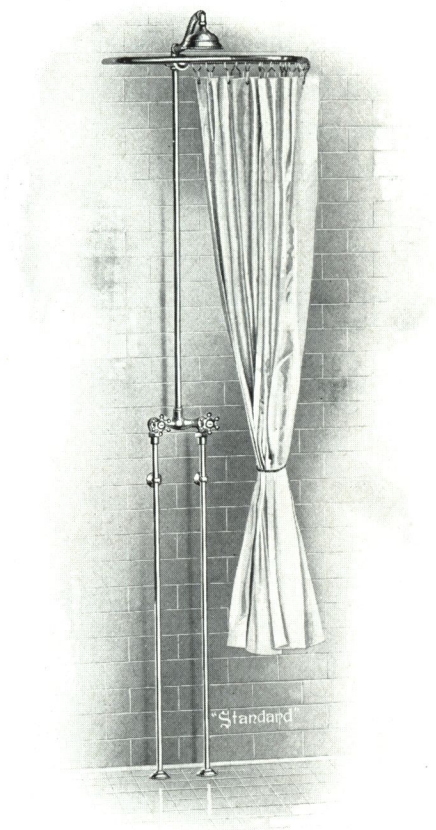


Plate 7180

Nickel-plated Brass Shower Bath, with 5-inch Rain Head Shower, $\frac{1}{2}$ -inch Supply Pipes to floor, Two China Index Controlling Valves, 24-inch Curtain Ring, Duck Curtain, Pins and Hold-back Chain.

Shower as described..... 41.00

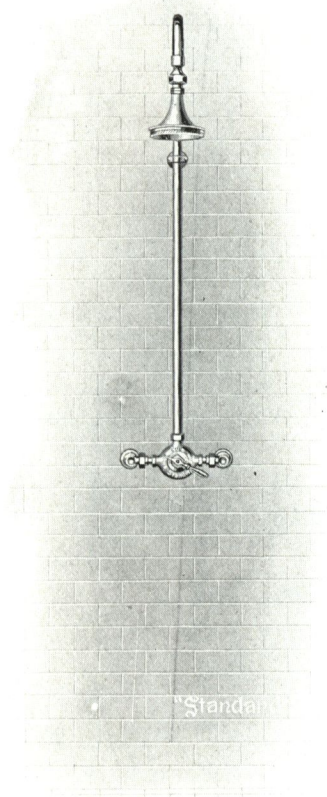


Plate 7181

Nickel-plated Brass Shower Bath, with Goose Neck and 5-inch Cast Brass Adjustable Ball Joint Rain Shower Head, with Removable Face, Anti-scalding Mixing Valve with Lever Handle, $\frac{1}{2}$ -inch Supply Pipes to wall.

Shower as described..... 36.00

Nason Shower Baths

Plate 7190

Nickel-plated Brass Shower Bath, with 5-inch Rain Head Shower, with Air Vent, Two China Index Controlling Valves, $\frac{1}{2}$ -inch Supply Pipes to floor.

Shower as described..... 26.50

Plate 7190

Plate 7191

Nickel-plated Brass Shower Bath with Goose Neck and 5-inch Cast Brass Adjustable Ball Joint Rain Shower Head with Removable Face, Anti-scalding Mixing Valve with Lever Handle, $\frac{1}{2}$ -inch Overhead Supply Pipes, with Loose Key Control Valves.

Shower as described..... 45.00

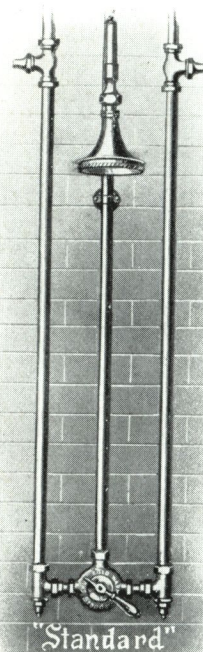


Plate 7191

Nason Shower Baths

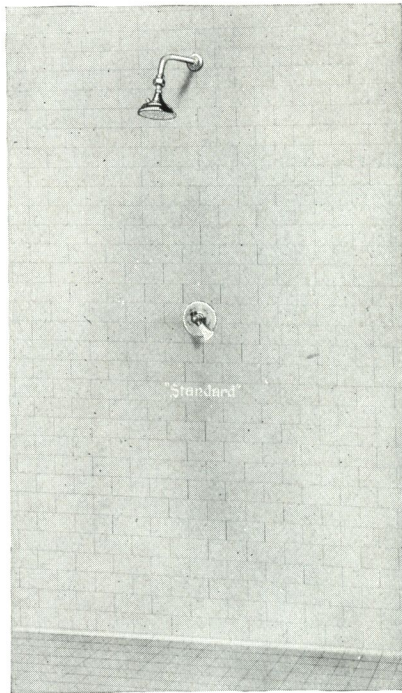


Plate 7200

Plate 7200

Nason Shower, with $\frac{1}{2}$ -inch Concealed Mixing Valve, with China Handle and Wall Plate, Nickel-plated Bent Arm and Ball Joint Needle Head.

Each as described. 32.50

Plate 7201

Nason Shower, with $\frac{1}{2}$ -inch Concealed Mixing Valve and Control Valves, with China Handles and Wall Plates, Nickel-plated Bent Arm and Ball Joint Needle Head.

Each as described. 39.50

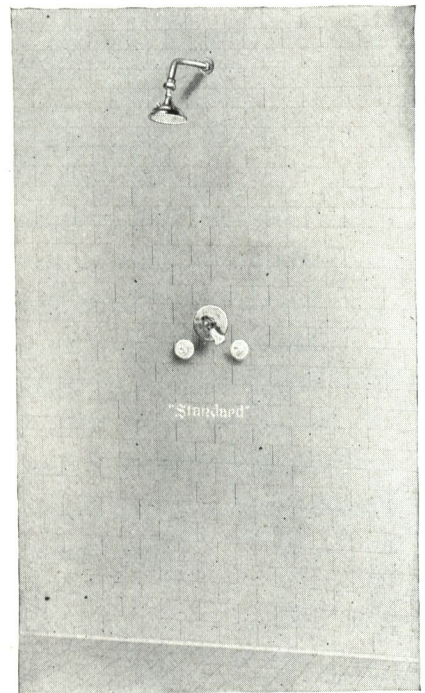


Plate 7201

These Showers, having ball joint heads, are particularly adapted for use at end of built-in tubs

Nason Shower Baths

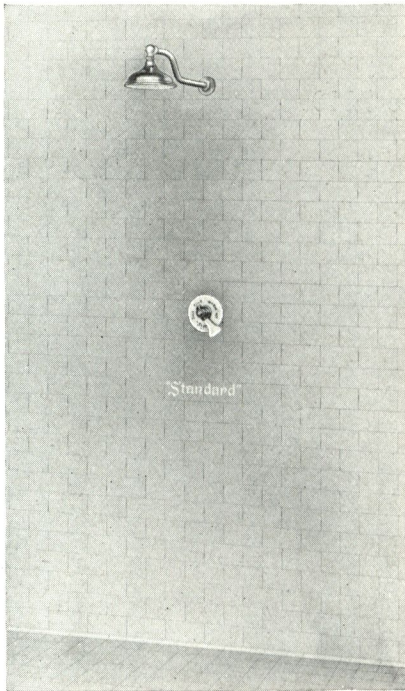


Plate 7210

Plate 7210

Nason Shower, with $\frac{1}{2}$ -inch Concealed Mixing Valve, with China Handle and Wall Plate, Nickel-plated Rigid Joint Needle Head.

Each as described	29.00
If with Nickel-plated Brass Wall Plate	27.50

Plate 7211

Nason Shower, with $\frac{1}{2}$ -inch Concealed Mixing Valve with China Handle and Nickel-plated Brass Wall Plate, Control Valves with China Handles and Wall Plates, Nickel-plated Rigid Joint Needle Head.

Each as described	36.25
If with China Wall Plate	37.75

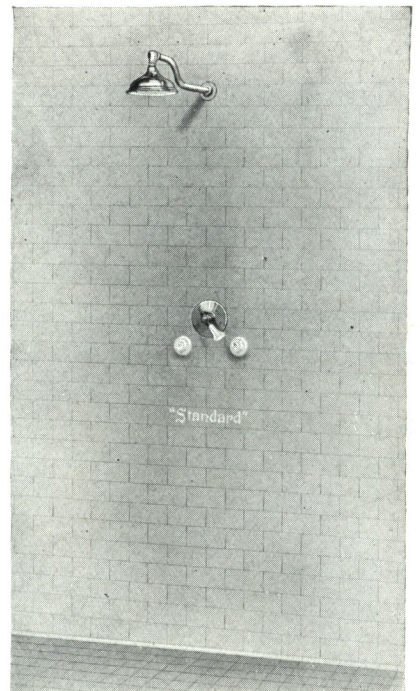


Plate 7211

These Showers are particularly adapted for use at side of built-in tubs

Nason Shower Baths

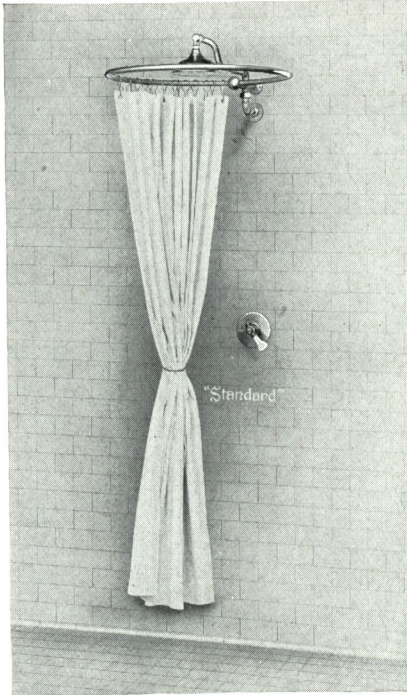


Plate 7220

Plate 7220

Nason Shower, with $\frac{1}{2}$ -inch Concealed Mixing Valve, with China Handle and Wall Plate, Nickel-plated Rigid Joint Needle Head, and 24 x 30-inch Oval Curtain Ring, with White Duck Curtain, Pins and Hold-back Chain.

Each as described	51.00
Same as above except with 24-inch Round Curtain Ring	46.50

Plate 7221

Nason Shower, with $\frac{1}{2}$ -inch Concealed Mixing Valve, and Control Valves with China Handles and Wall Plates, Nickel-plated Rigid Joint Needle Head and 24 x 30-inch Oval Curtain Ring, with White Duck Curtain, Pins and Hold-back Chain.

Each as described	58.50
Same as above except with 24-inch Round Curtain Ring	53.50

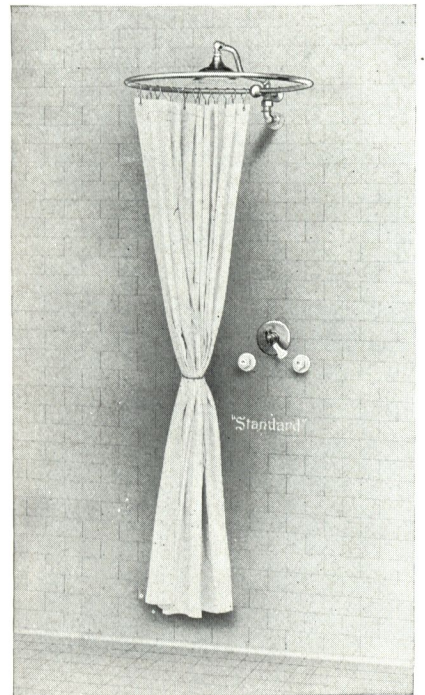


Plate 7221

Nason Shower Baths

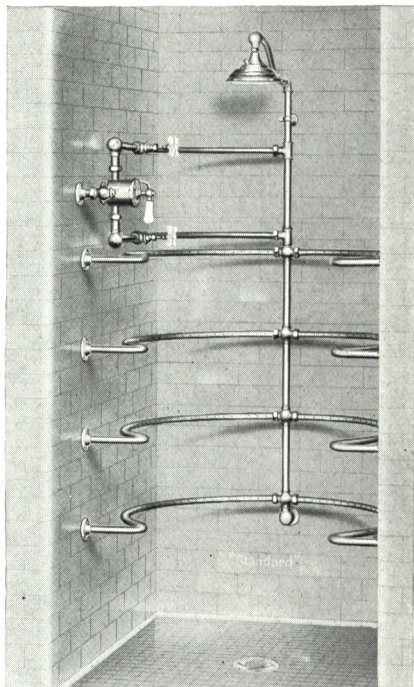


Plate 7230

Plate 7230

Nason Nickel-plated Brass Combination Shower and Needle Bath for Recess, with $\frac{3}{4}$ -inch Exposed Mixing Valve and China Handle Controlling Valves.

Each as described	170.00
Add for Nickel-plated Curtain Rod and White Duck Curtain . . .	10.00

Price does not include Floor Strainer. Stall, 38 x 38 inches.

Plate 7231

Nason Nickel-plated Brass Combination Shower and Needle Bath for Recess, with $\frac{1}{2}$ -inch Exposed Mixing Valve and China Handle Controlling Valves.

Each as described	96.00
Add for Nickel-plated Curtain Rod and White Duck Curtain . . .	10.00

Price does not include Floor Strainer. Stall, 38 x 38 inches.

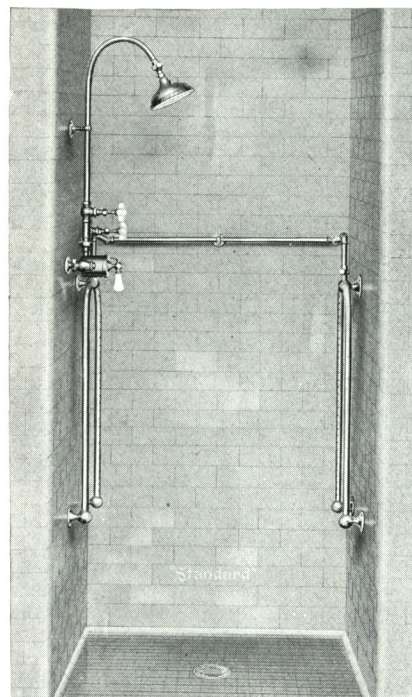


Plate 7231

Nason Shower Baths

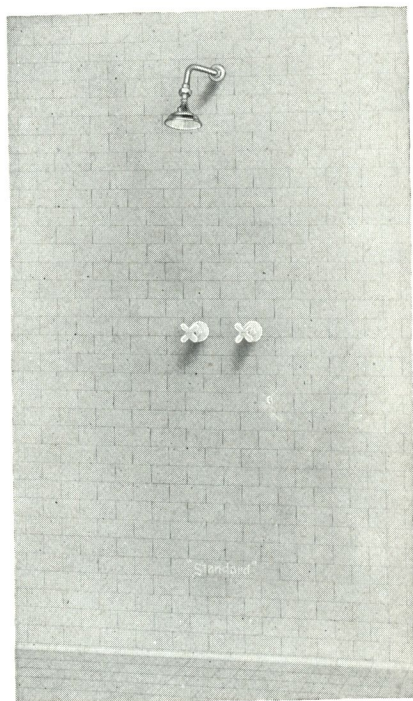


Plate 7240

Plate 7240

Nason Shower with $\frac{1}{2}$ -inch Concealed Compression Valves with Solid China Cross Handles and Wall Plates, Nickel-plated Ball Joint Needle Head.

Each as described 16.00

This Shower, having ball joint head is particularly adapted for use at end of built-in tub.

Plate 7241

Nason Shower with $\frac{1}{2}$ -inch Concealed Compression Valves, with Solid China Cross Handles and Wall Plates, Nickel-plated Rigid Joint Needle Head.

Each as described 15.00

This Shower is particularly adapted for use at side of built-in tubs.

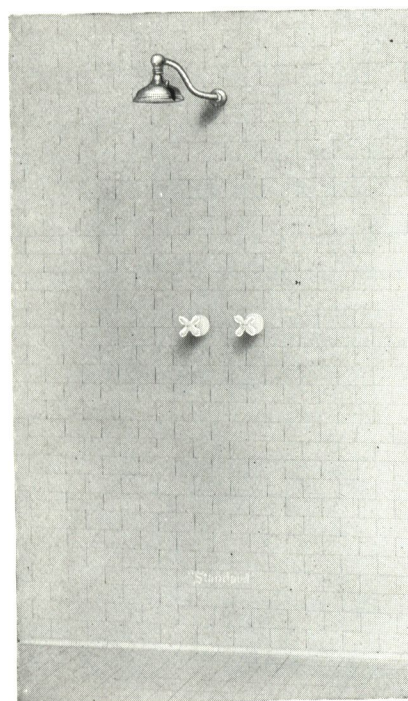


Plate 7241

Nason Shower Baths

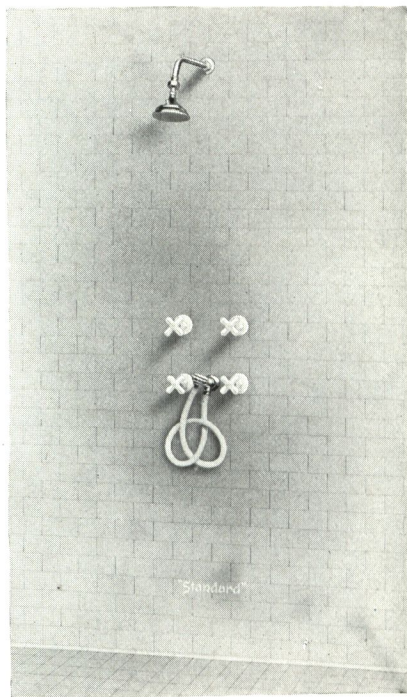


Plate 7250

Plate 7250

Nason Shower with Shampoo, $\frac{1}{2}$ -inch Concealed Compression Valves with Solid China Cross Handles and Wall Plates, Rubber Hose and Spray and Ball Joint Needle Head.

Each as described. 30.00

The special arrangement of valves in the above shower makes it very convenient to use, and obviates the use of check valves. The upper pair of valves control the shower while the lower pair control the shampoo.

Plate 7251

Nason Shower with Shampoo, $\frac{1}{2}$ -inch Concealed Compression Valves with Solid China Cross Handles and Wall Plates, Rubber Hose and Spray and Rigid Joint Needle Head.

Each as described. 28.00

Plate 7251 Shower is adapted for use at side of tub, while Plate 7250 is designed for use at end of tub.

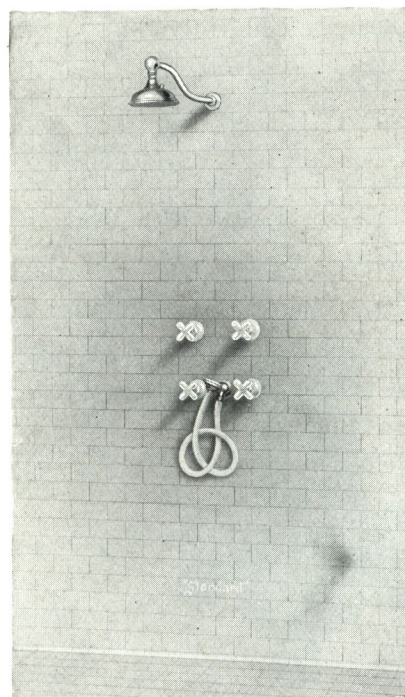


Plate 7251

Nason Shower Baths

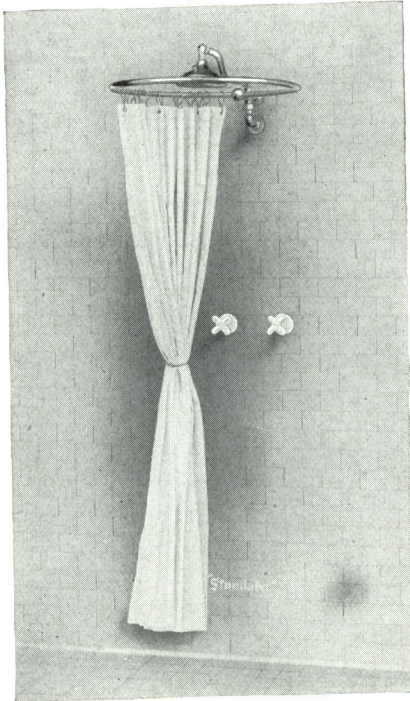


Plate 7260

Plate 7260

Nason Shower with $\frac{1}{2}$ -inch Concealed Compression Valves with Solid China Cross Handles and Wall Plates, Nickel-plated Rigid Joint Needle Head, 24-inch Round Curtain Ring, White Duck Curtain and Hold-back Chain.

Each as described. 30.00

Plate 7261

Nason Shower with Shampoo, $\frac{1}{2}$ -inch Concealed Compression Valves, with Solid China Cross Handles and Wall Plates, Nickel-plated Rigid Joint Needle Head, 24-inch Round Curtain Ring, White Duck Curtain, Hold-back Chain, and Rubber Hose with Spray.

Each as described. 43.50

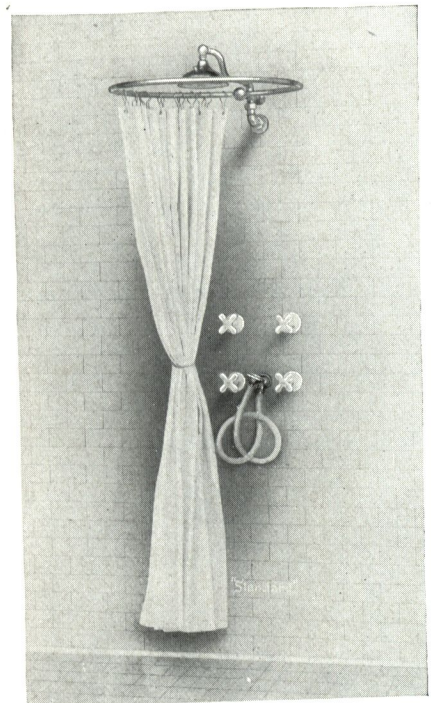


Plate 7261

Thermostatic Shower Bath and Hot Water Line Controller

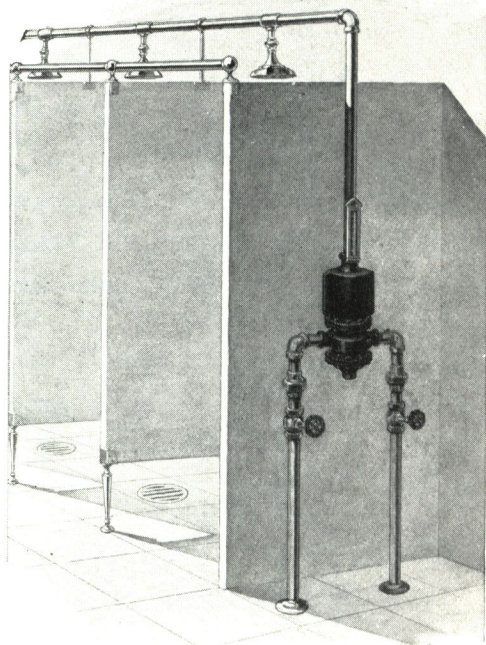


Plate 7270. Showing Controller as Applied in Supplying a Gang Shower

This is an absolutely automatic mixer of the Thermostatic type, operated entirely by the water temperature, adjusting itself automatically to all changes in either temperature or pressure in the supply lines and is positively an Anti-scald Regulator.

Our illustration shows the Controller as employed in a gang of showers. It will be noted from our table that they range in size and capacities from the No. 1 machine for individual showers, to the No. 8 with its 2½-inch connections and capacity sufficient for a gang of 50 showers.

Equipped with this Controller, each bather can exercise his own preference as to water temperature, changing to any degree desired without the slightest variation in the temperature of the water being supplied to any other shower or showers in the gang.

In modern hospitals and institutions, where Hydro-therapeutic treatment is practiced, this feature is of the utmost importance, guaranteeing as it does absolute immunity from accidental scalding of patients.

In hotels and large apartment buildings where high water temperatures are maintained for kitchen service, this controller may be installed in a hot water service line supplying a tier of bath rooms, and regardless of the initial high temperature or amount of water used, it will deliver it at a constant and proper temperature, 140 degrees, for instance, thus not only eliminating the danger of accidental scalding in baths and lavatories, but materially reducing the cost of upkeep in the hot water system in the constant replacing of washers, packings, gaskets, etc., due to excessive temperatures.

Price List Thermostatic Water Controller

Capacities	Connections	Price
No. 1 For Individual Shower.	½-inch Inlets, ¾-inch Outlet.	100.00
No. 3 Four Shower Heads, 25 gallons per minute.	¾-inch Inlets, 1-inch Outlet.	125.00
No. 4 Eight Shower Heads, 50 gallons per minute.	1-inch Inlets, 1¼-inch Outlet.	150.00
No. 5 Fifteen Shower Heads, 80 gallons per minute.	1¼-inch Inlets, 1½-inch Outlet.	175.00
No. 6 Twenty Shower Heads, 100 gallons per minute.	1½-inch Inlets, 2-inch Outlet.	185.00
No. 7 Forty Shower Heads, 200 gallons per minute.	2-inch Inlets, 2½-inch Outlet.	200.00
No. 8 Fifty Shower Heads, 250 gallons per minute.	2½-inch Inlets, 2½-inch Outlet.	225.00

Capacities are based on 40 pounds water pressure.

Controllers Nos. 1 to 4, inclusive, are made of brass and can be furnished in plain finish or full nickel-plate. Also made in special metals if desired. Nos. 5 to 8 inclusive have iron bodies, with bronze linings and valves. All Controllers are furnished with inlet check valves and removable filter screens.

Controllers Nos. 1 and 3 will be furnished with rear outlet instead of top if desired.

Controllers can be furnished to deliver water at any desired temperature but for all shower bath equipment, unless otherwise specified, are given a maximum limit of 110°. Mixers desired for Hot Water Line Control should be so specified and will be set to deliver at a maximum of 135°

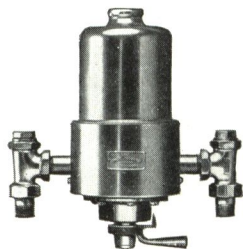


Plate 7271
Sizes 1, 3, 4



Plate 7272
Sizes 5, 6, 7, 8

Nason Shower Baths

Plate 7280

Nason Shower, with $\frac{1}{2}$ -inch Concealed Mixing and Controlling Valves with China Handles and Wall Plates, 5-inch Nickel-plated Ball Joint Needle Head, Rubber Hose and Shampoo Spray.

Each as described..... 41.50

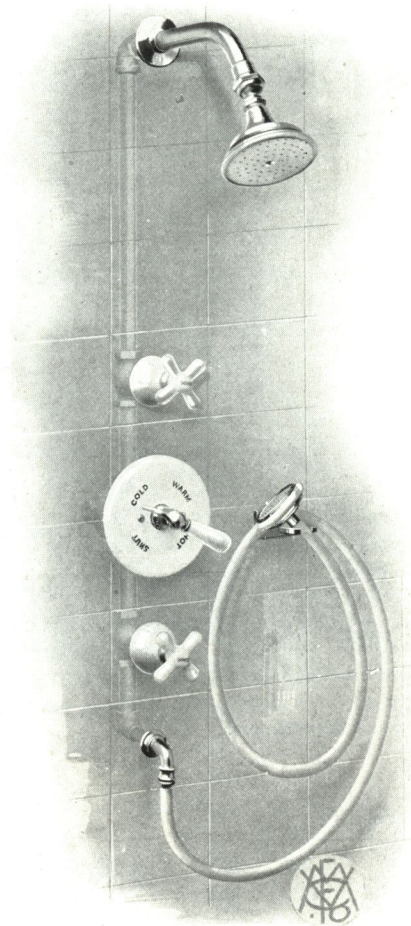


Plate 7280

Plate 7281

Nason Shower with $\frac{1}{2}$ -inch Concealed Mixing Valve with China Handle and Nickel-plated Wall Plate, 5-inch Nickel-plated Ball Joint Needle Head.

Each as described..... 22.50
Add for China Wall Plate..... 2.50



Plate 7281

Nason Shower Baths

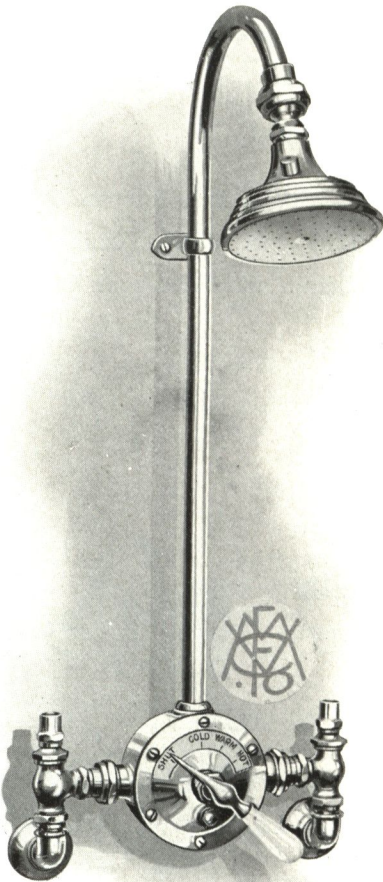


Plate 7290

Plate 7290

Nason Shower with $\frac{1}{2}$ -inch Nickel-plated Exposed Mixing Valve with China Handle, 5-inch Ball Joint Needle Head, and Supply Pipes to wall with Loose Key Stops.

Each as described.....	25.75
For Supply Pipes to floor or ceiling, add.....	4.00
If without Loose Key Stops, deduct.....	2.50

Plate 7291

Nason Galvanized Iron Shower with $\frac{1}{2}$ -inch Nickel-plated Exposed Mixing Valve with China Handle, and Supply Pipes to wall, 5-inch Nickel-plated Ball Joint Needle Head.

Each as described.....	21.50
For Supply Pipes to floor or ceiling, add.....	2.50
For Loose Key Stops, add.....	2.50

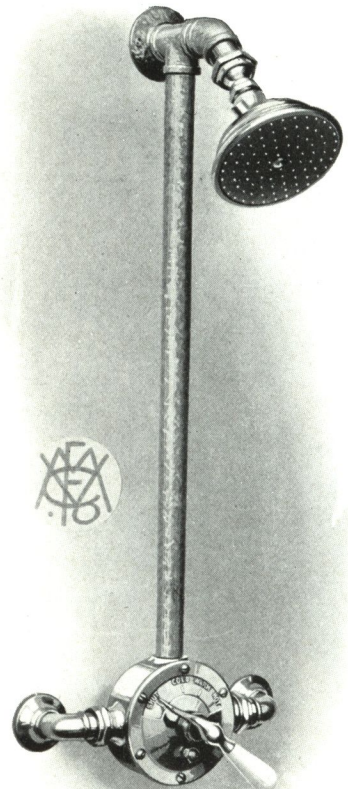


Plate 7291

Above Showers furnished with metal Handles at same price

Nason Shower Baths

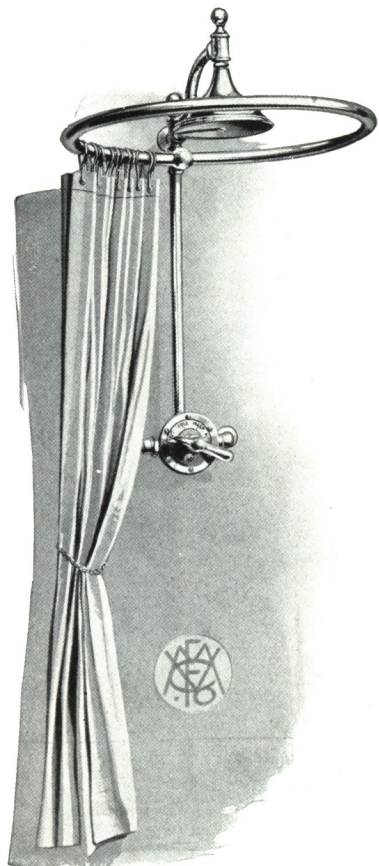


Plate 7300

Plate 7300

Nason Nickel-plated Shower, with $\frac{1}{2}$ -inch Exposed Mixing Valve, and Supplies to the wall, $6\frac{1}{2}$ -inch Needle Head, 24-inch Curtain Ring, White Duck Curtain and Hold-back Chain.

Each as described. 45.50

Plate 7301

Nason Nickel-plated Combination Shower and Needle Bath, with Exposed Mixing Valve and Controlling Valves with China Handles, Loose Key Stops with Supplies to wall, and 5-inch Ball Joint Needle Head.

Each as described. 55.00

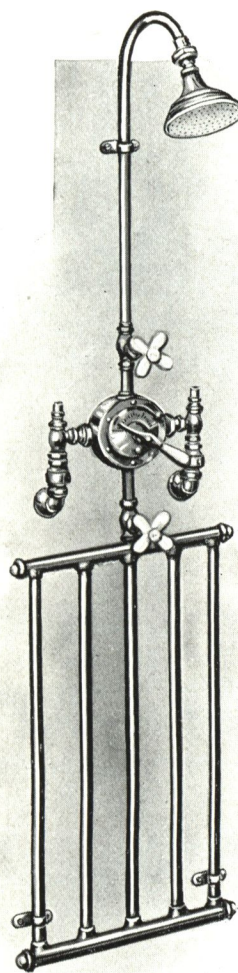


Plate 7301

Nason Shower Baths

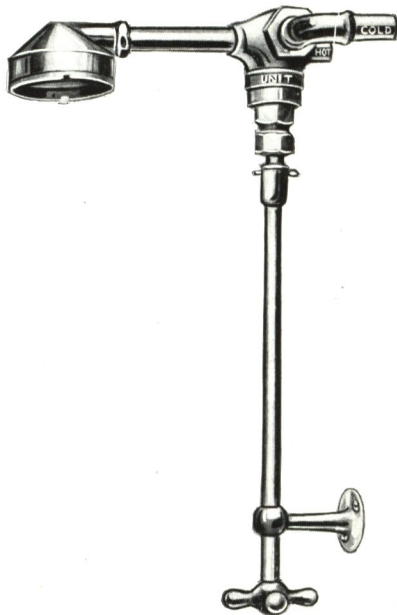


Plate 7310

Plate 7310

Nason Nickel-plated Heavy Engineers and Institution Shower Bath with Cast Brass Rain Head and Anti-scalding Mixing Valve.

As described..... 25.00

Plate 7311

Nason Nickel-plated Portable Shower as follows:

Curtain Ring—Brass tubing, heavily nickeled, 24 inches in diameter.

Curtain—High grade white duck.

Hold-back Hook (for Curtain)—Cast brass, nickeled. Holds the faucet clip, rubber hose and curtain entirely out of the way when the shower is not in use.

Curtain Snaps—Brass, nickel-plated, for hanging the curtain on the ring.

Rubber Tubing—5½ feet long, seamless rubber, woven core.

Needle Head—Heavy brass, nickeled, 6½ inches in diameter.

Connection—Cast Brass Clip Faucet Attachment, to connect shower to bath faucet. Specially strong Monel Metal Hooks make absolutely tight connection. Can't blow off.

Screws—For attaching to wall, brass, nickeled.

As described..... 16.50

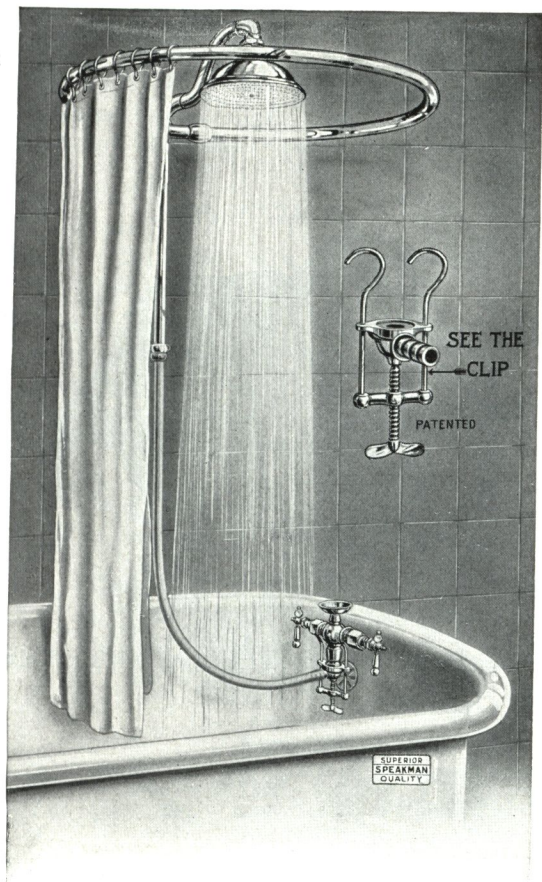


Plate 7311

Nason Mixing Valves

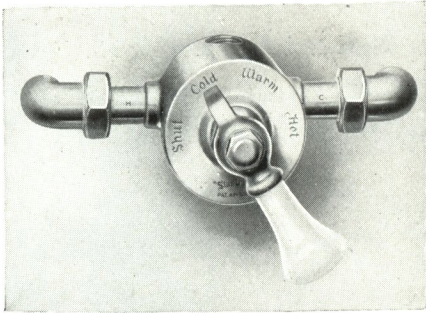


Plate 7320

Nason Positive Acting Concealed Type Mixing Valve, with Nickel-plated Dial and China Handle.

$\frac{1}{2}$ -inch Connection, each.....	20.00
$\frac{3}{4}$ -inch Connection, each.....	27.00

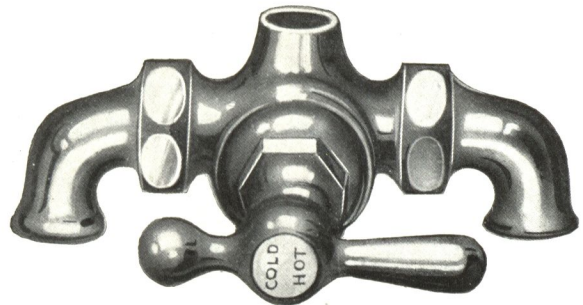


Plate 7321

Nason Nickel-plated Exposed Type Unit Mixing Valve, with Union Elbows, China Index and Solid Handle.

$\frac{1}{2}$ -inch Connection, each.....	18.00
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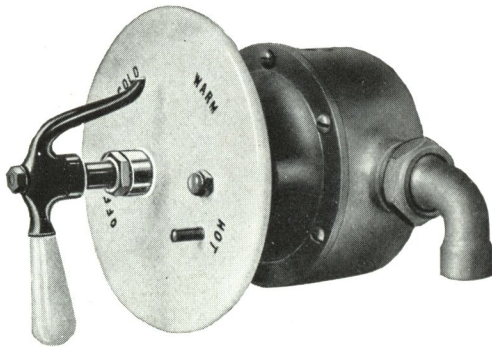


Plate 7322

Nason Style M Concealed Type Mixing Valve with China Dial.

$\frac{3}{8}$ -inch Connection, each.....	12.50
$\frac{1}{2}$ -inch Connection, each.....	16.50
$\frac{3}{4}$ -inch Connection, each.....	18.50
If with Nickel-plated Dial, deduct.....	2.00



Plate 7323

Nason Style M Exposed Type Mixing Valve with Nickel-plated Dial.

$\frac{3}{8}$ -inch Connection, each.....	10.75
$\frac{1}{2}$ -inch Connection, each.....	14.75
$\frac{3}{4}$ -inch Connection, each.....	16.75
If with China Dial, add.....	2.00

Above Valves can be furnished either with Porcelain Handles or Nickel-plated Brass Handle at the same price.

Nason Shower Accessories

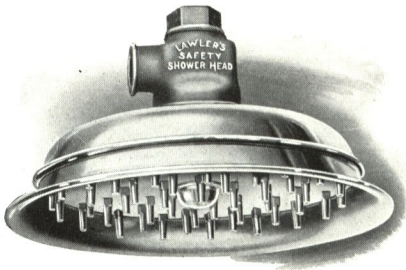


Plate 7330

Nason Lawler Thermostatic Anti-scalding Shower Head with $\frac{1}{2}$ -inch Iron Pipe Connection. Can be used in connection with any shower bath.

$8\frac{1}{2}$ -inch Nickel-plated Tubular Type, each..... 17.50
 $8\frac{1}{2}$ -inch Nickel-plated Rain Type, each..... 16.50



Plate 7331

Nason Heavy Cast Brass Shower Head, $\frac{1}{2}$ -inch I. P. Connection.

Nickel-plated, each..... 5.00



Plate 7332

Nickel-plated Brass Curtain Hooks.

Per dozen..... .90



Plate 7333

Nickel-plated Curtain Rod, 3 feet long, with Flanges and Curtain Hooks.

As described..... 4.50
 Add for every 6 inches in length..... .60

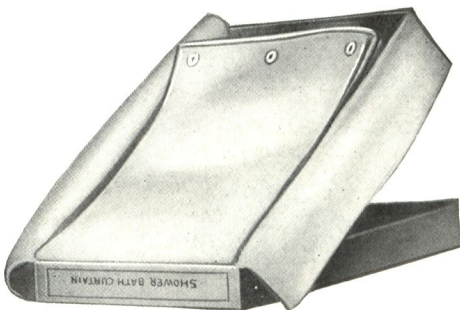


Plate 7334

Shower Bath Curtains with Nickel-plated Brass Grommets. Stock size 6 feet 6 inches x 6 feet.

Can be furnished in various qualities of rubber, white duck, silk and near silk of any desired size.

Prices on application.

Plate 7334



Plate 7335

Plate 7335

Nickel-plated Shower Bath Thermometer with $\frac{1}{2}$ -inch Iron Pipe Connection.

Each..... 10.00



Plate 7336

Nason Nickel-plated Copper Tilting Basin for Straight Wall, with Brackets and Stop.

Each..... 10.00
 Diameter, 11 inches; Depth, 5 inches.

Shower Heads

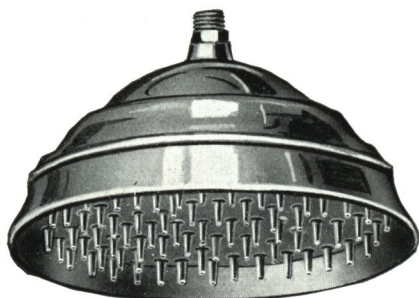


Plate 7340

Crown Tubular Shower

Nickel-plated Copper. $8\frac{1}{2}$ inches Diameter. $\frac{1}{2}$ -inch
Male I. P. Connection
Per dozen..... 30.00



Plate 7341

Equinox Rain Shower

Nickel-plated Copper. $8\frac{1}{2}$ inches Diameter. $\frac{1}{2}$ -inch
Male I. P. Connection.
Per dozen..... 18.00



Plate 7342

Tubular Shower Head
with Air Valve

Diameter, inches.....	7	9	$10\frac{1}{2}$	12	14	16	18	20
Size of Inlet I. P., inches.....	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$	1	1	1	1	1
Plate 7342 Nickel-plated Copper, each.....	3.75	4.65	6.75	12.00	21.00	30.00	45.00	60.00
Plate 7343 Nickel-plated Copper, each.....	5.70	6.75	9.00	15.00	24.00	33.00	49.50	64.50

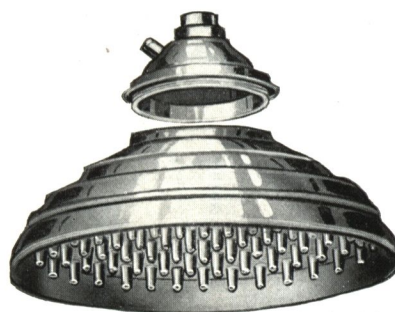


Plate 7343

Tubular Shower Head with Air Valve
and Removable Top

Plate 7344

Heavy Tubular Shower Head with
Air Valve and Removable Top

Nickel-plated Copper. 9 inches Diameter. $\frac{3}{4}$ -inch
Female I. P. Connection.
Each..... 9.75

Male Thread same price



Plate 7345

Extra Heavy Tubular Shower Head
with Removable Top

Nickel-plated Copper. Detachable Tubes. $9\frac{1}{4}$ inches
Diameter. $\frac{3}{4}$ -inch Female I. P. Connection.
Each..... 12.00

Shower Heads



Plate 7350

Rain Shower Head with Air Valve

Diameter, inches.....	4	5	6½	8	10	12	15
Size of Inlet I. P., inches.....	⅜	½	½	¾	1	1	1
Plate 7350 Nickel-plated, each.....	1.50	1.65	2.25	2.85	6.75	8.25	11.25
Plate 7351 Nickel-plated, each.....	.....	3.30	3.75	4.50	8.75	9.75	12.75

Furnished with either Male or Female Thread



Plate 7351

Rain Shower Head with Air Valve and Removable Top



Plate 7352

Tulip Shower Head with Beveled Slotted Removable Face

Diameter, inches.....	4½	5	6½
Nickel-plated, each.....	3.30	3.60	4.00

Furnished with ⅜, ½, ¾ or 1 inch Male or Female Thread as desired.



Plate 7353

Tulip Rain Shower Head with Removable Face

Nickel-plated. 4 inches Diameter. ½ or ¾-inch I. P. Connection.
Each, Male or Female..... 2.25

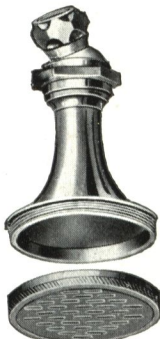


Plate 7354

Tulip Shower Head with Beveled Slotted Removable Face and Ball Joint Connection

Nickel-plated. 4 inches Diameter	
With ½-inch I. P. Size Ball Joint, each.....	5.70
With ¾-inch I. P. Size Ball Joint, each.....	6.00



Plate 7355

Tulip Rain Shower Head with Removable Face and Ball Joint Connection

Nickel-plated. 4 inches Diameter	
With ½-inch I. P. Size Ball Joint, each.....	5.00
With ¾-inch I. P. Size Ball Joint, each.....	5.25

Shampoo Sprays



Plate 7360

Nickel-plated Shampoo Spray
with Short Shank

Diameter of Face, $2\frac{1}{4}$ inches

Per dozen..... 1.80



Plate 7361

Nickel-plated Shampoo Spray
with Long Shank

Diameter of Face, $2\frac{1}{2}$ inches

Per dozen..... 3.75



Plate 7362

Nickel-plated Shampoo Spray
with Detachable Nipple

Diameter of Face, $2\frac{1}{2}$ inches.

Per dozen..... 7.50

Bath Sprays

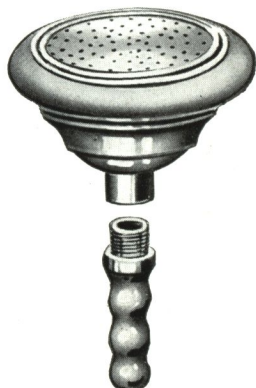


Plate 7363

Nickel-plated Bath Spray with Rubber
Ring and Detachable Nipple

Diameter of Face, inches.....	$2\frac{1}{2}$	3	$3\frac{1}{2}$
Per dozen.....	7.20	10.50	15.00

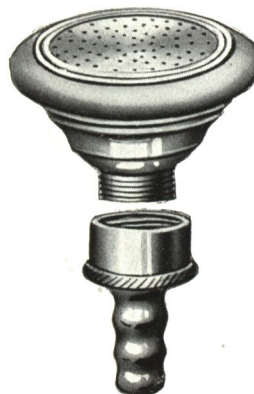


Plate 7364

Nickel-plated Bath Spray with Rubber
Ring and Detachable Coupling

Diameter of Face, inches.....	4	5
Per dozen.....	27.00	37.50



Plate 7365

Nickel-plated Bath Spray with Short Shank
and Rubber Ring

Diameter of Face, inches.....	$2\frac{1}{2}$	3	$3\frac{1}{2}$
Per dozen.....	4.50	6.75	9.00



Plate 7366

Brass Hose Sprinkler with $\frac{3}{8}$ -inch I. P. Size
Female Thread

Diam. Face, ins.	$1\frac{1}{2}$	$1\frac{3}{4}$	2	$2\frac{1}{4}$	$2\frac{1}{2}$	3
Per dozen.....	4.20	4.50	4.80	5.10	5.40	6.00

Nason Syphon Jet Closet

"Silent Jet"

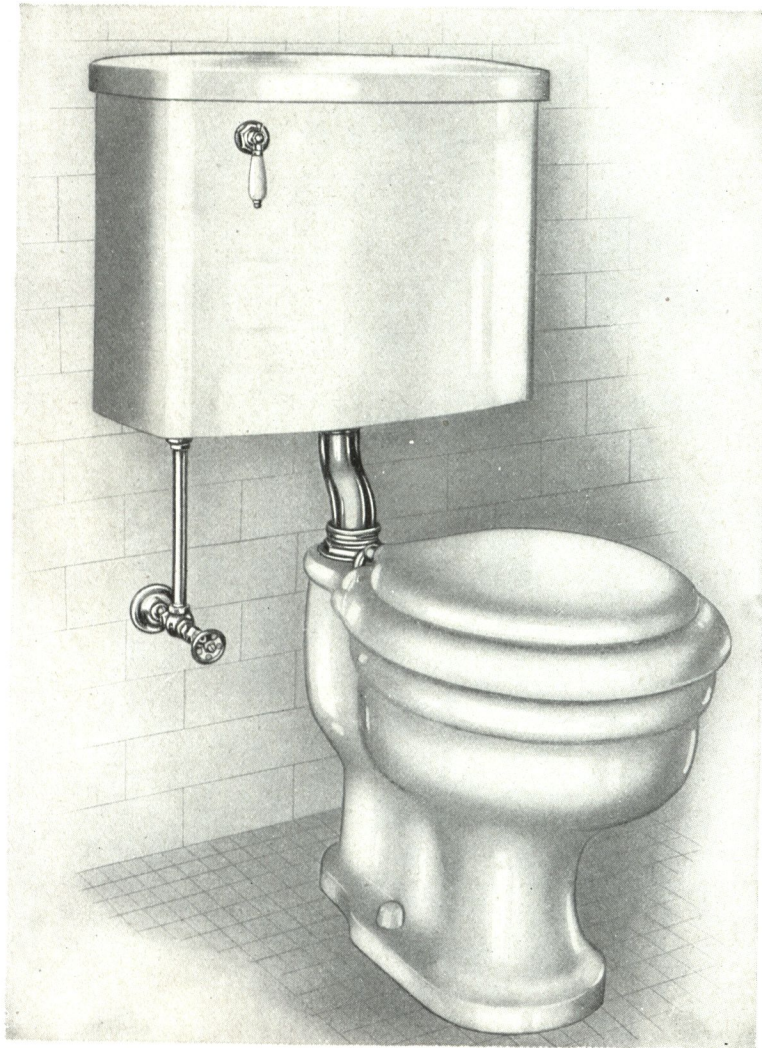


Plate 7370

Nason Silent Syphon Jet Closet with Vitreous China Round Front Low Tank with China Lever Handle, No. 800 Cellu-White Seat and Cover, with Nickel-plated Bar Hinges, Supply Pipe and Control Valve, Brass Floor Flange, Bolts and China Caps..... 45.00

Nason Syphon Jet Closet

Barracks

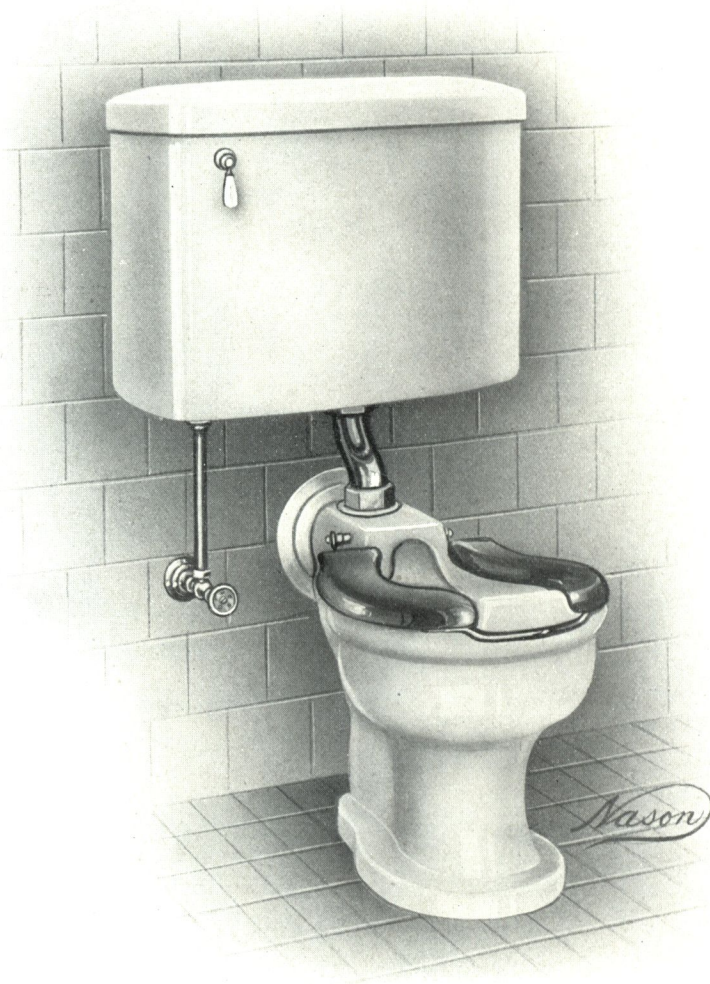


Plate 7380

Barracks Syphon Jet Closet with Raised Rear Vent and Porcelain Wall Flange, Sanitary Lip, with Security Screwed Outlet Connection, Hartford Natural Oak Open Front Seat without Cover, with Nickel-plated Side Post Hinges and Front Re-enforcing Bar, Round Front Vitreous China Low Tank, with Nickel-plated Flush Connection, Supply Pipe and Control Valve..... 60.00

Nason Syphon Jet Closet

Seneca



Plate 7390

Seneca Syphon Jet Closet, Round Front Vitreous China Low Tank with Flush Connection, Supply Pipe and Control Valve, No. 800 Mahoganized Birch Non-split Seat with Cover, with Nickel-plated Brass Bar Hinges, Brass Floor Flange, Bolts and China Bolt Caps. . . . 32.50

Nason Syphon Jet Closet

Nason-Fulton



Plate 7400

Nason-Fulton Syphon Jet Closet with Security Screwed Outlet Connection, No. 225 Cellu-
White Seat and Cover with Nickel-plated Brass Adjustable Post Hinges, Round Front
Vitreous China Low Tank with Flush Connection, Supply Pipe and Control Valve..... 45.00

Namanco Syphon Jet Closet

With Extended Lip



Plate 7410

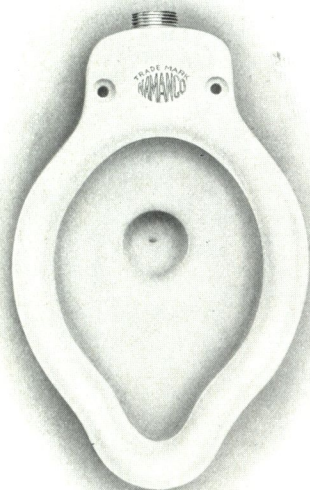


Plate 7410A

Top View of Namanco Closet with Extended Lip

Namanco Syphon Jet Closet with Extended Lip, with No. 1 Melrose Vitreous China Low Tank, with China Lever Handle, Hartford Natural Oak Open Front Seat without Cover, with Nickel-plated Brass Front Re-enforcing Bar and Nickel-plated Brass Bar Hinges, Brass Floor Flange and China Bolt Caps.....		35.00
If Seat is furnished with Vanadium Non-Corrosive Metal Trimmings instead of Nickel-plated Brass, add.....		1.50
Porcelain Floor Slab, as shown.....		3.50

Namanco Syphon Jet Closet

With No. 1 Monarch Vitreous China Tank



Plate 7420

Namanco Syphon Jet Closet with No. 1 Monarch Vitreous China Low Tank, with China Lever Handle, Mahogany Finish Non-split Seat and Cover, Brass Floor Flange and China Bolt Caps.....

32.00

If Seat and Cover are wanted with Cellu-White Finish, add.....

6.00

Porcelain Floor Slab, as shown, extra.....

3.50

Nason Syphon Down-Jet Closet

Utica



Plate 7430

Utica Syphon Down-Jet Closet with No. 2 Vitreous China Low Tank, with China Lever

Handle, Oak Non-split Seat and Cover, Brass Floor Flange and China Bolt Caps. 28.00

Porcelain Floor Slab, as shown, extra. 3.50

Nason Reversed Trap Washdown Closet

Roscoe

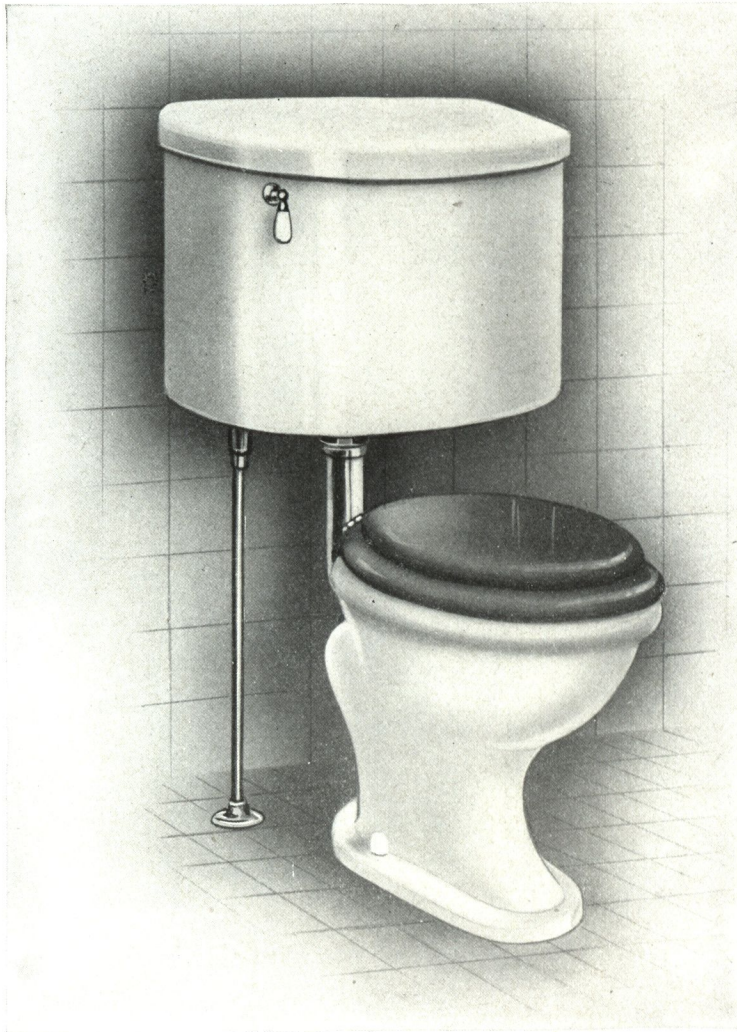


Plate 7440

Roscoe Reversed Trap Washdown Closet with No. 2 B. M. Round Front Vitreous China Low Tank, with China Lever Handle, Natural Oak Non-split Seat and Cover, Brass Floor Flange, Bolts and China Bolt Caps. 25.00

Nason Washdown Closet

Davis



Plate 7450

Davis Washdown Closet with Davis Recess Front Vitreous China Low Tank, with China Lever Handle, Natural Oak Seat and Cover with Nickel-plated Post Hinges, Brass Floor Flange, Bolts and China Bolt Caps

25.00

Nason Syphon Jet Closet

Seneca



Plate 7460

Seneca Syphon Jet Closet with Natural Oak Non-split Seat and Cover with Nickel-plated Brass Post Hinges, No 20 Natural Oak Low Tank, Brass Floor Flange, Bolts and China Bolt Caps.

Complete as described.....	30.00
If with Birch-Mahogany Woodwork	32.00

Nason Syphon Down-Jet Closet

Utica

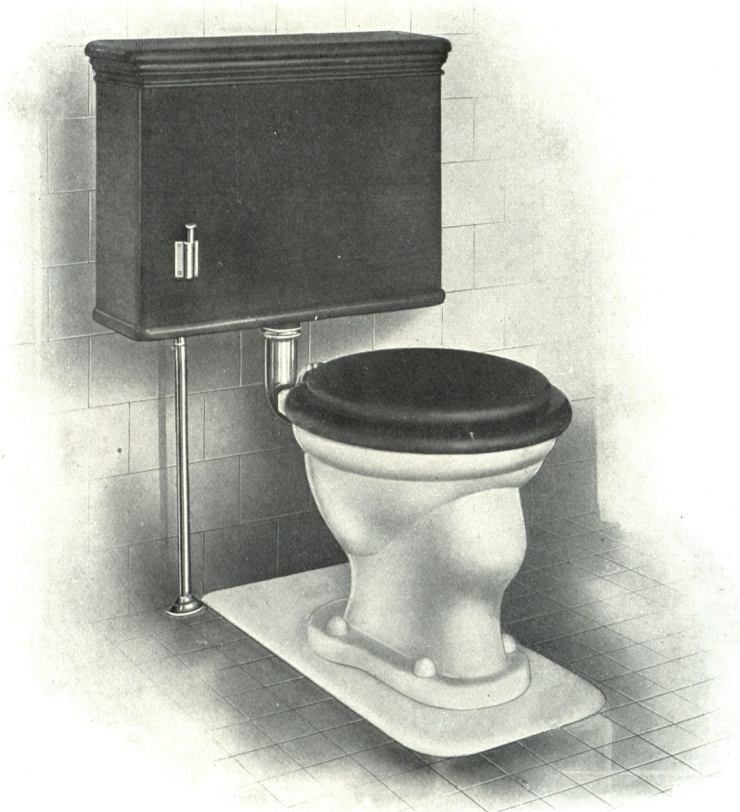


Plate 7470

Utica Syphon Down-Jet Closet with Natural Oak Non-split Seat and Cover, with Nickel-plated Brass Post Hinges, No. 20 Natural Oak Low Tank, Brass Floor Flange and China Bolt Caps..... 25.00

Porcelain Floor Slab, as shown, extra..... 3.50

Nason Closet Combinations

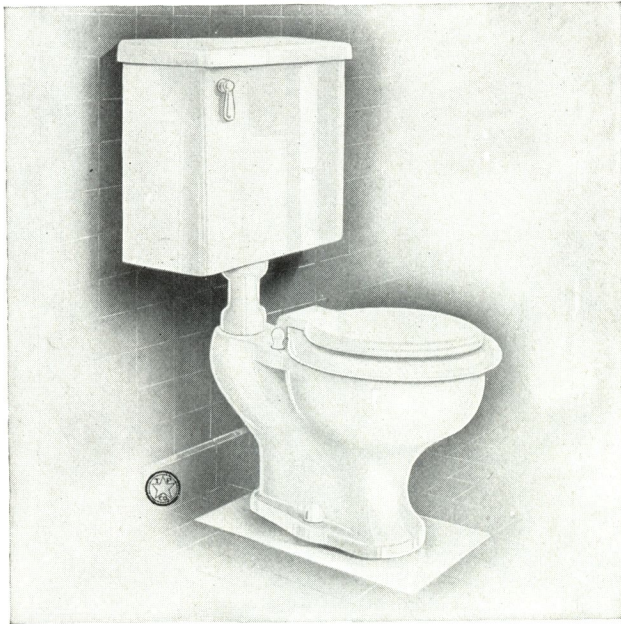


Plate 7480

Plate 7480

Si-wel-clo De Luxe Vitreous China Noiseless Syphon Jet Closet, with Square Vitreous China Low Tank, Cellu-White Seat and Cover, Brass Floor Flange and China Bolt Caps.

This is an absolutely all white combination, as all exposed metal parts are white enameled. The flush connection is covered with a China Sleeve and Supply is through wall at back, with Control Valve inside of tank.

As described.....	63.00
Add for Vitreous Floor Slab.....	3.50

Plate 7481

The Morgan Vitreous China Saddle Seat Syphon Jet Closet with Vitreous China Low Tank and Special Open Front Seat with Heavy Nickel-plated Hinges, Brass Floor Flange and China Bolt Caps, Control Valve on Supply Pipe

This Closet is highly recommended by sanitary experts and physicians as the most sanitary and comfortable closet on the market.

The seat being made to conform to the curve in the bowl insures a natural and comfortable position, while the raise in the front Extended Lip and Flushing Rim makes this an absolutely sanitary closet.



Plate 7481

As described.....	48.00
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Nason Closet Combinations



Plate 7490

Plate 7490

The Nassau Vitreous China Syphon Jet Closet with Round Front Vitreous China Low Tank, with Bottom China Lever Handle Flushing Device, Natural Oak Non-split Seat and Cover with Nickel-plated Bar Hinges, Brass Floor Flange, Bolts and China Bolt Caps.

As described. 40.00

Plate 7491

The Devon Vitreous China Syphon Action Closet, with Special Narrow Vitreous China Low Tank, with China Lever Handle, Mahoganzed Birch Non-split Seat and Cover with Nickel-plated Hinges, Brass Floor Flange, Bolts and China Bolt Caps.

As described. 30.00



Plate 7491

The special feature of this Combination is the narrow width tank. It meets a condition frequently encountered in small bath rooms, where the ordinary tank is too wide.

Nason Closet Combinations



Plate 7500

Plate 7500

The Halsey Vitreous China Syphon Jet Closet with Seat-operating Device, Natural Oak Seat without Cover, Vitreous China Round Front Low Tank, Brass Floor Flange, Bolts and China Bolt Caps.

This Combination is intended for schools, institutions and buildings of a like public nature.

As described 53.00

Plate 7501

The Bergen Vitreous China Syphon Action Closet with Seat-operating Device, Natural Oak Seat without Cover, Vitreous China Round Front Low Tank, Brass Floor Flange, Bolts and China Bolt Caps.

This Combination is intended for schools, institutions and buildings of a like public nature.

As described 46.00



Plate 7501

Nason Closet Combinations



Plate 7510

Plate 7510

The Belvidere Vitreous China Center Outlet Syphon Jet Closet with Namanco Concealed Push Button Flush Valve with Supply to floor, with Integral Loose Key Shut-off, Birch Mahogany Seat and Cover with Nickel-plated Cast Brass Offset Post Hinges, Brass Floor Flange, Bolts and China Bolt Caps.

As described.....	50.00
If with Cellu-White Seat and Cover, add.....	6.00

Plate 7511

The Stanton Vitreous China Syphon Jet Closet, with Seat Action Flush, with Full Eight-Gallon Low Oak Tank, lined with 12-Ounce Copper, Compound Lever High Pressure Ball Cock, All Brass Syphon Flush Valve, Heavy Oak Seat with Nickel-plated Full Box Hinge, with Brass Weight Arms, and Bronzed Iron Counter-balance Ball Weights, Brass Floor Flange, Bolts and China Bolt Caps.

As described.....	53.00
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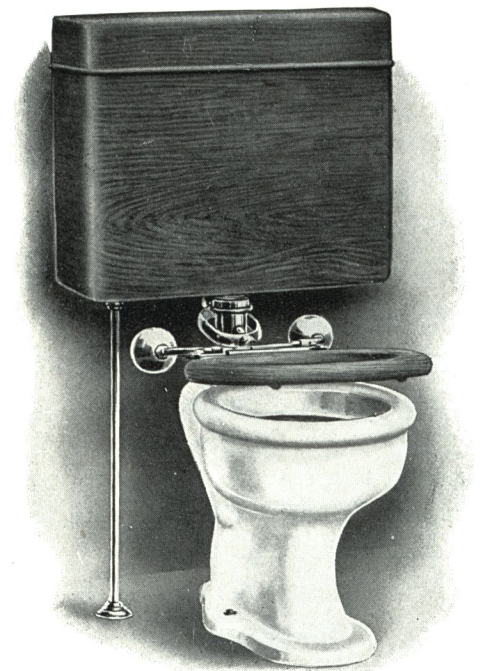


Plate 7511

Nason Syphon Jet Closet

De Luxe

Plate 7520



Plate 7520

This closet possesses a larger water area than any other closet in the market. The outlet is toward the back, rather than in the center, as with most syphon jet closets, thus limiting the soilaible area; the greatest depth of water being immediately under the point of evacuation, at which point it is, about, 4 or 5 inches deep. The height of this closet is from $1\frac{1}{2}$ to 2 inches lower than the regular height, which we have found by experience to be desirable in point of comfort, there being with closets of such height less liability of bowl soiling. Attached to the closet is our No. 4 Lever Handle Flush Valve, which we guarantee needs neither repair nor attention, and is automatic under all conditions of pressure fluctuation from 5 to 100 pounds.

The De Luxe Syphon Jet Water Closet, with Nickel-plated No. 4 Flush Valve, Special Shape Mahoganized Birch Seat and Cover, with Brass Floor Flange, and China Bolt Caps.

Complete as described.....	42.00
If Seat and Cover are wanted with Celluvarno finish, add	6.00

Special Shape Water Closet Seat

Plate 7521

This illustration shows our Special Shape Seat, with extra long opening from front to back, furnished with the De Luxe Water Closet. In devising this seat we have provided for comfort and non-soiling qualities beyond those of any other manufactured.

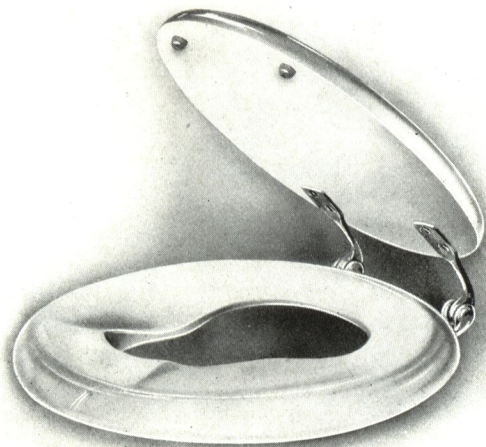


Plate 7521

Nason Syphon Jet Closet

With Concealed Flush Valve

De Luxe



Plate 7530

Our new concealed flush valve is located conveniently for the occupant; the push button is entirely porcelain, with a porcelain cap covering the top part of the valve, thereby reducing to a minimum the exposed brass surface—an admittedly important and commendable feature.

The operation of the closet is effected by simply pressing down the push button, which results in a thorough, quick and noiseless flush, with a minimum discharge of water.

The De Luxe Closet possesses a larger bowl water area than any other similar form of construction; the outlet is toward the back, rather than in the center, as found in most syphon jet closets, thereby limiting the soilaible area—the greatest depth of water being from four to five inches, and that immediately under the point of evacuation.

The De Luxe with Concealed Flush Valve, Nickel-plated Brass Adjustable Shut-off, Quartered

Oak Seat and Cover, Brass Floor Flange and China Bolt Caps, complete as described 50.00

If Seat and Cover are wanted with White Celluvarno Finish, add 6.00

Nason-Fulton Syphon Jet Closet

With Security Screw Outlet Connection



Plate 7540

Nason-Fulton Syphon Jet Closet with Security Screw Outlet Connection, No. 4 Lever Handle
 Nickel-plated Brass Flush Valve with Integral Shut-off, No. 225 Cellu-White Seat and
 Cover with Nickel-plated Adjustable Post Hinges..... 40.00

Nason-Fulton Syphon Jet Closet

With Security Screw Outlet Connection



Plate 7550

Nason-Fulton Syphon Jet Closet with Security Screw Outlet Connection, No. 1 Push Button Nickel-plated Brass Flush Valve with Integral Shut-off, No. 800 Hardwood Cabinet Finish Non-split Seat with Cover, Nickel-plated Brass Bar Hinges.....		32.50
If Seat is without Cover, deduct.....		.75
If with No. 800 Cellu-White Seat and Cover, add.....		4.50
If Flush Valve is wanted without Integral Stop, deduct.....		1.00
Porcelain Floor Slab as shown, extra.....		3.50

Nason-Fulton Syphon Jet Closet

With Security Screw Outlet Connection



Plate 7560

Nason-Fulton Syphon Jet Closet with Security Screw Outlet Connection, No. 2 Push Button
 Nickel-plated Brass Flush Valve with Integral Shut-off, No. 225 Cellu-White Seat and
 Cover with Nickel-plated Brass Adjustable Post Hinges 40.00

Nason-Fulton Syphon Jet Closet

With Security Screw Outlet Connection



Plate 7570

Nason-Fulton Syphon Jet Closet with Security Screw Outlet Connection, No. 3 Push Button
Nickel-plated Brass Flush Valve with Side Inlet Adjustable Connection and Loose Key
Shut-off, No. 225 Cellu-White Seat and Cover with Nickel-plated Brass Adjustable
Post Hinges.

42.00

Nason Syphon Jet Closet

Fulton



Plate 7580

Nason-Fulton Syphon Jet Closet with Security Screw Outlet Connection, No. 225 Cellu-White
 Seat and Cover with Nickel-plated Brass Adjustable Post Hinges, No. 7 Push Button
 (Concealed) Flush Valve with Inlet Connection..... 40.00

Nason-Fulton Syphon Jet Closet

With Security Screw Outlet Connection



Plate 7590

Nason-Fulton Syphon Jet Closet with Security Screwed Outlet Connection with Raised Rear Vent and China Wall Flange, No. 225 Cellu-White Seat without Cover with Nickel-plated Brass Adjustable Post Hinges, No. 2 Push Button Nickel-plated Brass Flush Valve with Integral Shut-off.....

46.50

Nason Syphon Jet Closet

Boston



Plate 7600

Nason-Boston Syphon Jet Closet with 3-inch Integral Raised Vent and Back Supply, Hartford
 Natural Oak Open Seat without Cover, with Nickel-plated Brass Front Reinforcing Bar,
 Nickel-plated Brass Bar Hinges, No. 7 Push Button (Concealed) Flush Valve, Brass Floor
 Flange and China Bolt Caps. 40.00

Nason Syphon Jet Closet

Boston



Plate 7610

Nason-Boston Syphon Jet Closet, No. 4 Lever Handle Nickel-plated Brass Flush Valve with
Integral Shut-off, No. 225 Cellu-White Seat and Cover with Nickel-plated Brass Adjustable
Post Hinges, Brass Floor Flange, Bolts and China Bolt Caps 35.50

Nason Syphon Jet Closet

Boston



Plate 7620

Nason-Boston Syphon Jet Closet, No. 5 Nickel-plated Brass Bottom Lift Lever Oil Controlled Flush Valve, No. 225 Cellu-White Seat and Cover with Nickel-plated Brass Adjustable Post Hinges, Brass Floor Flange, Bolts and China Bolt Caps.	48.00
If Valve is furnished with Nickel-plated Brass 1¼-inch Loose Key Stop Valve, add.	5.00

Note: The special features of the No. 5 Oil Controlled Valve are as follows:

No by-pass, perfect after-fill, noiseless operation, all working parts accessible, not affected by water conditions, will operate on 3 pounds pressure or over, can be operated with or without Oil Control, no Cup Washers, readily adjusted as to volume of water and duration of flush, can be removed without shutting off water or interfering with operation of Valve.

Oil Controlled Valves can be operated with muddy, gritty or salt water without affecting any of the working parts. The Control is entirely confined in the Oil Chamber and will operate years without any attention whatever.

Nason Syphon Jet Closet

Namanco



Plate 7630

Namanco Syphon Jet Closet with Extended Lip and Side Inlet, No. 50 Nickel-plated Push Button Oil Controlled Flush Valve, with Loose Key Integral Shut-off, Mahoganized Birch Hartford Open Front and Back Seat with Nickel-plated Brass Heavy Bar Hinge, Brass Floor Flange, Bolts and China Bolt Caps..... 40.00

Nason Syphon Jet Closet

Boston



Plate 7640

Nason-Boston Syphon Jet Closet, Side Inlet, No. 6 Push Button Nickel-plated Brass Flush Valve with Separate Loose Key Shut-off, No. 225 Cellu-White Seat and Cover with Nickel-plated Brass Adjustable Post Hinges, Brass Floor Flange, Bolts and China Bolt Caps..... 39.00

Nason Syphon Jet Closet

Boston



Plate 7650

Nason-Boston Syphon Jet Closet, No. 1 Push Button Nickel-plated Brass Flush Valve with Integral Shut-off, No. 800 Hardwood Cabinet Finish Non-split Seat with Cover and Nickel-plated Brass Bar Hinges, Brass Floor Flange, Bolts and China Bolt Caps.	29.00
Porcelain Floor Slab as shown, extra.	3.50
If with No. 800 Cellu-White Seat and Cover, add.	4.50

Nason-York Syphon Jet Closet



Plate 7660

Nason-York Syphon Jet Closet, with Sanitary Lip, No. 4 Lever Handle Nickel-plated Brass Flush Valve with Integral Shut-off, No. 170 Cabinet Finish Oak Open Seat without Cover, with Nickel-plated Brass Reinforcing Plate, Nickel-plated Brass Bar Hinges, Brass Floor Flange, Bolts and China Bolt Caps.....		31.00
If Seat is with Cover, add.....		.75
If with No. 250 Cellu-White Seat without Cover, add.....		4.75
Porcelain Floor Slab, as shown, extra.....		3.50

Nason-York Syphon Jet Closet



Plate 7670

Nason-York Syphon Jet Closet, No. 4 Lever Handle Nickel-plated Brass Flush Valve with Integral Shut-off, No. 677 Hardwood Cabinet Finish Non-split Seat without Cover, Nickel- plated Brass Bar Hinges, Brass Floor Flange, Bolts and China Bolt Caps.....		32.00
If Seat is with Cover, add.....		.75
If with No. 800 Cellu-White Seat and Cover, add.....		4.50
If Flush Valve is wanted without Integral Stop, deduct.....		1.00
Porcelain Floor Slab as shown, extra.....		3.50

Nason Syphon Jet Closet

Namanco



Plate 7680

Namanco Syphon Jet Closet with Extended Lip, Hartford Natural Oak Open Seat without Cover, with Nickel-plated Brass Front Reinforcing Bar and Nickel-plated Brass Bar Hinges, No. 4 Lever Handle Nickel-plated Brass Flush Valve with Integral Shut-off, Brass Floor Flange, Bolts and China Bolt Caps.....		34.00
Porcelain Floor Slab, as shown.....		3.50

Nason Syphon Jet Closet

Namanco



Plate 7690

Namanco Syphon Jet Closet, No. 800 Cabinet Finish Oak Non-split Seat with Cover, with Nickel-plated Brass Bar Hinges, No. 4 Lever Handle Nickel-plated Brass Flushing Valve with Integral Shut-off, Brass Floor Flange, Bolts and China Bolt Caps.....	32.00
Porcelain Floor Slab, as shown.....	3.50
If with No. 800 Cellu-White Seat and Cover, add.....	4.50

Nason Syphon Jet Closet

Namanco



Plate 7700

Namanco Syphon Jet Closet, No. 800 Cabinet Finish Oak Non-split Seat without Cover, with Nickel-plated Brass Bar Hinges, No. 1 Push Button Nickel-plated Brass Flushing Valve with Integral Shut-off, Brass Floor Flange, Bolts and China Bolt Caps.....	30.00
Porcelain Floor Slab, as shown.....	3.50
If with No. 800 Cellu-White Seat without Cover, add.....	4.00

Nason Syphon Jet Closet

Namanco



Plate 7710

Namanco Syphon Jet Closet, No. 800 Cabinet Finish Oak Non-split Seat with Cover with Nickel-plated Brass Bar Hinges, No. 7 Push Button (Concealed) Flush Valve, Brass Floor Flange, Bolts and China Bolt Caps..... 30.00

Nason Syphon Down-Jet Closet

Mammoth



Plate 7720

Mammoth Extra Heavy (65-pound), Vitreous China Syphon Down-jet Closet, Extra Heavy Oak Seat with Nickel-plated Brass Bar Hinges and Counterbalance Ball Weight Attachment, Nickel-plated Brass Reinforcing Plate, with No. 1 Push Button Nickel-plated Brass Flush Valve with Integral Shut-off, Brass Floor Flange, Bolts and China Bolt Caps 35.00

Nason Syphon Down Jet Closet

Mammoth



Plate 7730

Mammoth Extra Heavy (65-pound), Vitreous China Syphon Down-jet Closet, Non-split Extra Heavy Oak Seat with Nickel-plated Brass Bar Hinges, with No. 1 Push Button Nickel-plated Brass Flush Valve with Integral Shut-off, Brass Floor Flange, Bolts and China Bolt Caps..... 31.50

Nason Syphon Down-Jet Closet

Mammoth



Plate 7740

Mammoth Extra Heavy (65-pound), Vitreous China Syphon Down-jet Closet, with Integral
 Crockery Seat, with No. 1 Push Button Nickel-plated Brass Flush Valve with Integral
 Shut-off, Brass Floor Flange, Bolts and China Bolt Caps..... 30.00

Nason Washdown Closet

Prison



Plate 7750

Nason Prison Extra Heavy Vitreous China Wall Outlet Washdown Closet with Integral Crockery

Seat with Brass Wall Flange and Bolts, No. 7 Push Button (Concealed) Flush Valve . . . 35.00

Nason Extra Heavy Washdown Closet

Giant

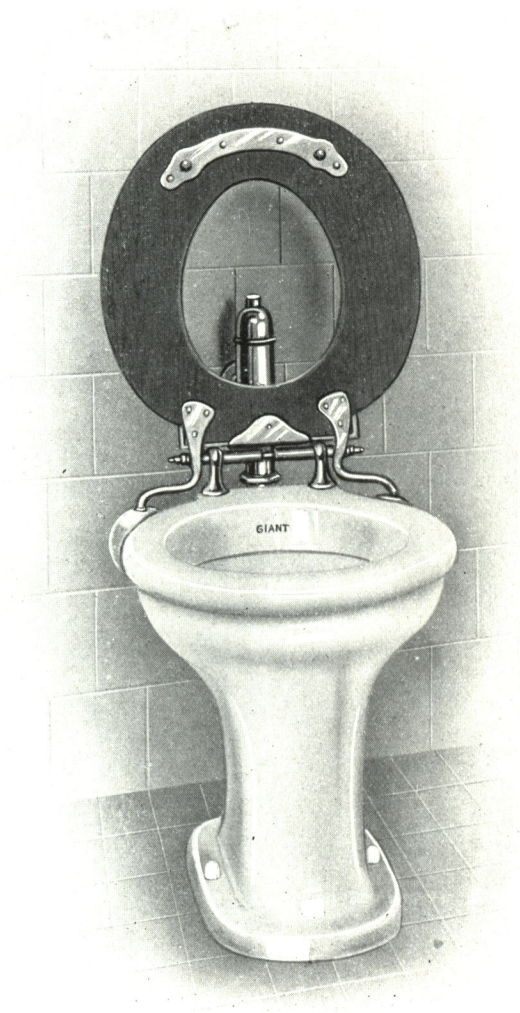


Plate 7760

Nason-Giant Extra Heavy Vitreous China Washdown Closet, Extra Heavy Oak Seat with Nickel-plated Brass Bar Hinges with Counterbalance Ball Weight Attachment, Nickel-plated Brass Reinforcing Plate, with No. 1 Push Button Nickel-plated Brass Flush Valve with Integral Shut-off, Brass Floor Flange, Bolts and China Bolt Caps..... 33.00

Nason Extra Heavy Washdown Closet

Giant



Plate 7770

Nason-Giant Extra Heavy Vitreous China Washdown Closet, Non-split Extra Heavy Oak
Seat with Nickel-plated Brass Bar Hinges, with No. 1 Push Button Nickel-plated Brass
Flush Valve with Integral Shut-off, Brass Floor Flange, Bolts and China Bolt Caps. . . . 30.00

Nason Extra Heavy Washdown Closet

Giant



Plate 7780

Nason-Giant Extra Heavy Vitreous China Washdown Closet with Integral Crockery Seat,
 with No. 1 Push Button Nickel-plated Brass Flush Valve with Integral Shut-off, Brass
 Floor Flange, Bolts and China Bolt Caps..... 30.00

Nason Seat-Acting Flush Valve Closet

Atlantic



Plate 7790

Atlantic Heavy Vitreous China Washdown Closet with Extra Heavy Cabinet Finish Oak Seat with Nickel-plated Heavy Solid Clamp Hinges and Reinforcing Plate, No. 8 Automatic Seat Action Flush Valve at back of Closet, Loose Key Stop, Brass Floor Flange, Bolts and China Bolt Caps.....

45.00

Nason Seat-Acting Flush Valve Closet

Pacific



Plate 7800

Pacific Heavy Vitreous China Syphon Jet Closet with Extra Heavy Cabinet Finish Oak Seat with Nickel-plated Heavy Solid Clamp Hinges and Reinforcing Plate, No. 8 Concealed Automatic Flush Valve at back of Closet, Loose Key Stop, Brass Floor Flange, Bolts and China Bolt Caps..... 50.00

Nason Syphon Down-Jet Closet

With Security Screw Outlet Connection

Bayou



Plate 7810

Bayou Syphon Down-jet Closet with Sanitary Lip, Security Screw Outlet Connection, No. 1	
Push Button Nickel-plated Brass Flush Valve with Integral Shut-off, No. 170 Hardwood	
Cabinet Finish Open Seat without Cover, with Nickel-plated Brass Bar Hinges.....	29.00
If Seat is with Cover, add.....	.75
If with No. 250 Cellu-White Seat, without Cover, add.....	4.75
Porcelain Floor Slab, as shown, extra.....	3.50

Nason Syphon Down-Jet Closet

With Security Screw Outlet Connection

Bayou



Plate 7820

Bayou Syphon Down-jet Closet with Security Screw Outlet Connection, No. 1 Push Button	
Nickel-plated Brass Flush Valve with Integral Shut-off, No. 677 Hardwood Cabinet	
Finish Non-split Seat, without Cover, Nickel-plated Brass Bar Hinges.....	27.00
If Seat is with Cover, add.....	.75
If with No. 800 Cellu-White Seat, without Cover, add.....	4.00
If Flush Valve is wanted without Integral Stop, deduct.....	1.00
Porcelain Floor Slab, as shown, extra.....	3.50

Nason Syphon Down-Jet Closet

Willard



Plate 7830

Willard Syphon Down-jet Closet, with Cabinet Finish Oak Self-raising Seat without Cover,
 Nickel-plated Brass Spring Hinges, No. 1 Push Button Nickel-plated Brass Flush Valve
 with Integral Shut-off, Brass Floor Flange, Bolts and China Bolt Caps..... 30.00

Nason Syphon Jet Closet Primal



Plate 7840

In this illustration of our Primal Syphon Jet Closet, it will be observed that a seat proper is wholly eliminated.

In service, the occupant assumes a natural position over the bowl, but no part of the person is in contact therewith.

For public comfort stations or conditions where, for sanitary reasons, contact of the body is objectionable, as in the case of contagious diseases, the Primal will recommend itself as the most desirable form of construction yet developed.

Factories and establishments with numerous employees will find the Primal an economical installation, eliminating, as it must, the tendency to convert the toilet room into a reading and smoking room at the expense of the employer.

The Primal from a hygienic standpoint is undeniably perfect, its construction simply involving a return to the natural posture of "primitive man," as the name of the bowl implies.

This closet measures 18 inches in length, 8 inches in height, with front and back curved upwards, having a water area in the bowl of 15 inches by 5 inches.

The Nason "Primal" Syphon Jet Closet, with No. 1 Push Button Nickel-plated Brass Flush Valve with Integral Shut-off, Brass Floor Flange, Bolts and China Bolt Caps..... 32.00

Nason Wall Closets

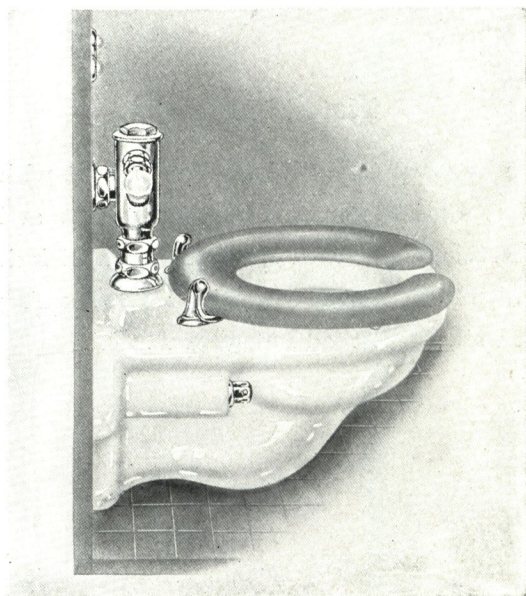


Plate 7850

Plate 7850

Nason Vitreous China Ejecto Wall Closet with Top Supply, fitted with Mahoganized Birch Open Front Seat, with Nickel-plated Hinges and Reinforcing Strip, Nickel-plated Brass Flush Valve with Oscillating China Handle, Seat Bumpers, and Wall Bolts.

As described.....	53.00
If Concealed Wall Chair is wanted, add.....	25.00

Plate 7851

Nason Vitreous China Ejecto Wall Closet with Back Supply, fitted with Mahoganized Birch Open Front Seat, with Nickel-plated Hinges and Reinforcing Strip, Nickel-plated Brass Concealed Flush Valve with Oscillating China Handle coming through wall, Seat Bumpers and Wall Bolts.



Plate 7851

As described.....	57.00
If Concealed Wall Chair is wanted, add.....	25.00

Nason Wall Closets

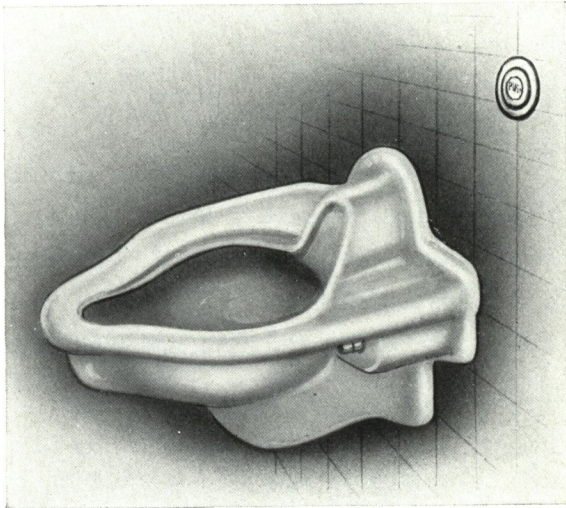


Plate 7860

Plate 7860

Nason Vitreous China Ejecto Wall Closet with Back Supply and Integral Crockery Seat and Extended Lip, fitted with Brass Concealed Flush Valve, with Push Button Operating Device coming through wall, Brass Wall Flange and Bolts.

As described.....	57.00
If Concealed Wall Chair is wanted, add.....	25.00

Plate 7861

Nason Vitreous China Ejecto Wall Closet with Top Supply and Extended Lip, fitted with Mahoganized Birch Open Front Seat with Nickel-plated Hinges, Reinforcing Plate and Balance Weights, Nickel-plated Flush Valve with China Oscillating Handle, Seat Bumpers, and Wall Bolts.

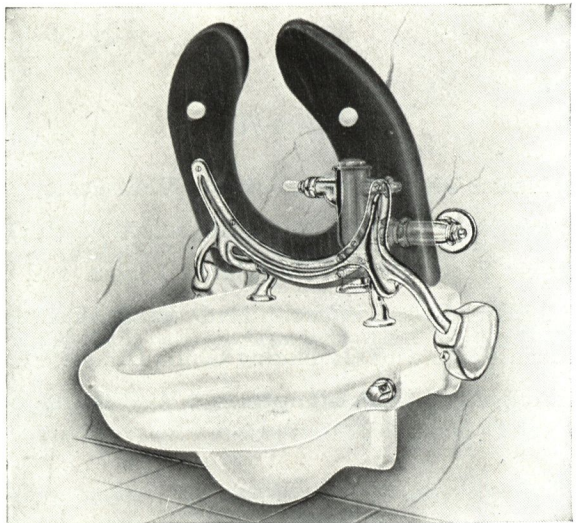


Plate 7861

As described.....	68.50
If Concealed Wall Chair is wanted, add.....	25.00

Nason Flush Valves

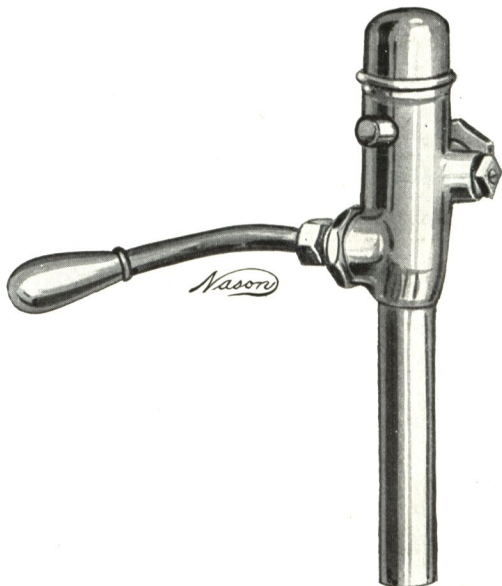


Plate 7870

Plate 7870

Nason No. 4 Nickel-plated Lever Handle Flush Valve with Integral Shut-off, Back Inlet, Wall Escutcheon, and 1¼-inch Tail Piece.

Each.....	20.00
If without Integral Shut-off, deduct	2.00

Plate 7871

Nason No. 1 Nickel-plated Top Push-button Flush Valve with Integral Shut-off, Back Inlet, Wall Escutcheon and 1¼-inch Tail Piece.

Each.....	18.00
If without Integral Shut-off, deduct.....	2.00

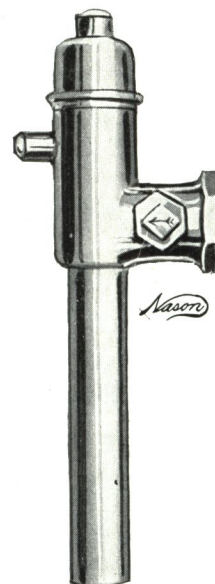


Plate 7871

Nason Flush Valves

Plate 7880

Nason No. 5 Nickel-plated Lever Handle Flush Valve with Regulating By-pass, Integral Shut-off, Wall Escutcheon and 1¼-inch Tail Piece.

Each..... 20.00
If without Integral Shut-off, deduct..... 2.00

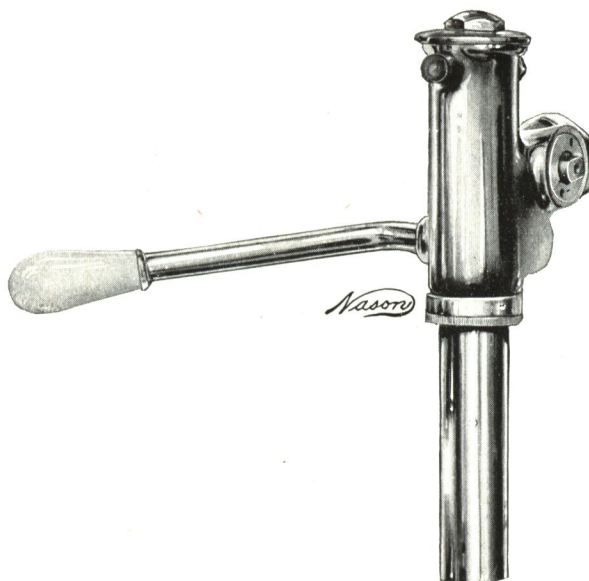


Plate 7880

Plate 7881

Nason No. 6 Nickel-plated Top Push-button Flush Valve with Regulating By-pass, Integral Shut-off, Wall Escutcheon and 1¼-inch Tail Piece.

Each..... 18.00
If without Integral Shut-off, deduct..... 2.00

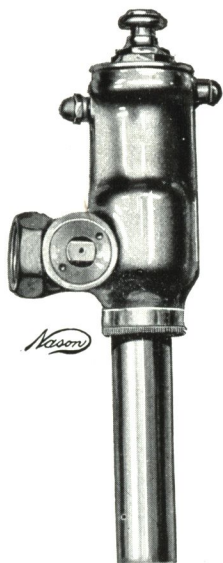


Plate 7881

Plate 7882

Nason No. 30 Nickel-plated Flush Valve with Back Inlet and China Oscillating Handle and 1¼-inch Tail Piece.

Each..... 18.00

The No. 30 Flush Valve is noiseless and will work on either direct or tank supply and requires no regulating for any pressure between 5 and 100 pounds.

Also made in the Push-button and Seat-acting Type for either exposed or concealed valves.

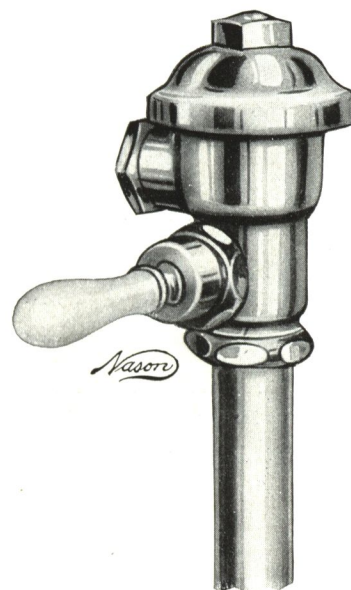


Plate 7882

Nason Flush Valves

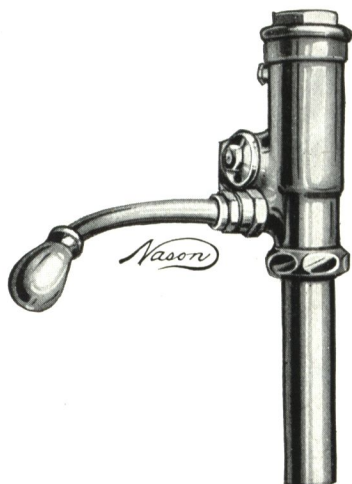


Plate 7890

Plate 7890

Nason No. 10 Nickel-plated Lever Handle Flush Valve, with Regulating By-pass, Integral Shut-off, Back Inlet, Wall Escutcheon and $1\frac{3}{8}$ -inch Tail Piece.

Each.....	20.00
If without Integral Shut-off, deduct.....	2.00

Plate 7891

Nason No. 42 Nickel-plated Flush Valve with China Oscillating Handle, Regulating By-pass, Integral Shut-off, Wall Escutcheon, and $1\frac{1}{2}$ -inch Tail Piece.

Each.....	18.00
If without Integral Shut-off, deduct.....	2.00

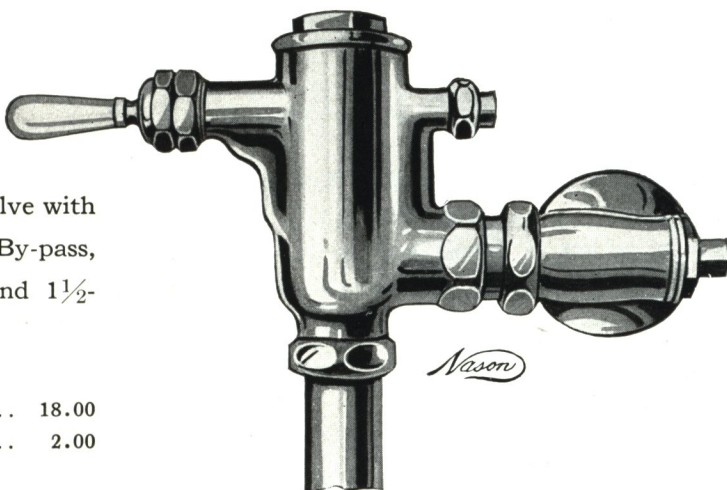


Plate 7891

Plate 7892

Nason No. 43 Nickel-plated Flush Valve, with China Index Front Push Button, Regulating By-pass, Integral Shut-off, Wall Escutcheon and $1\frac{1}{2}$ -inch Tail Piece.

Each.....	18.00
If without Integral Shut-off, deduct.....	2.00

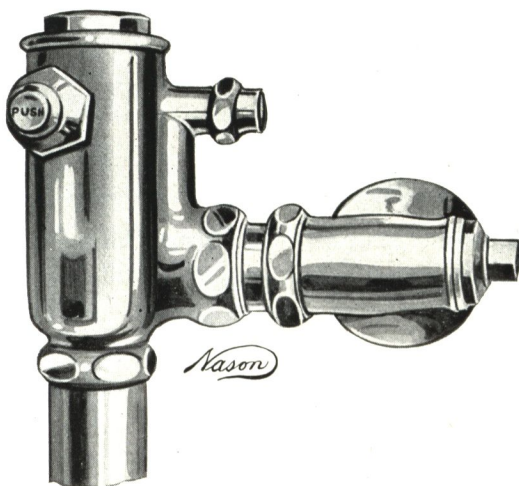


Plate 7892

Nason Flush Valves

Plate 7900

Nason No. 21 Nickel-plated Flush Valve, Oil Controlled, with Side Lever Handle with China Grip, Regulating By-pass, Back Supply, and 1¼-inch Tail Piece.

Each.....	20.00
If Shut-off is wanted, add.....	2.00

Can be used on any style of closet and in any position.

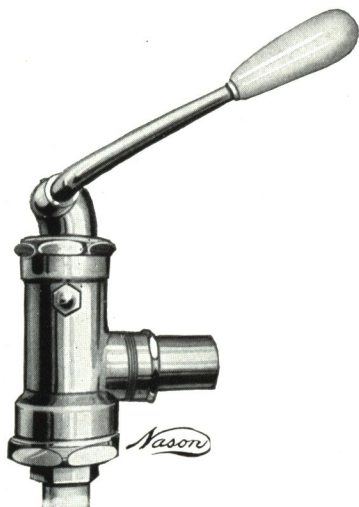


Plate 7900

Plate 7901

Nason No. 22 Nickel-plated Flush Valve, Oil Controlled, with Universal Lever Handle with China Grip, Regulating By-pass and 1¼-inch Tail Piece.

Each.....	20.00
If Shut-off is wanted, add.....	2.00

Can be used on any style of closet and in any position.

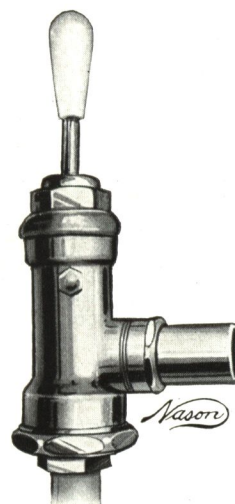


Plate 7901

Plate 7902

Nason No. 50 Nickel-plated Push-button Oil Regulated Flush Valve, with Integral Shut-off, with Wall Escutcheon, arranged for Back Supply and Side Inlet Closet.

Each.....	20.00
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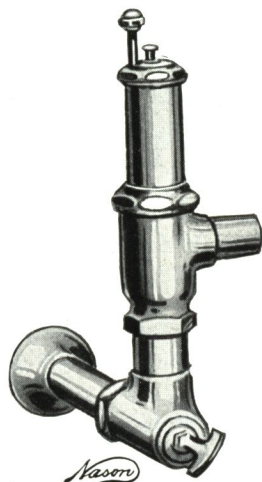


Plate 7902

Nason Bidet

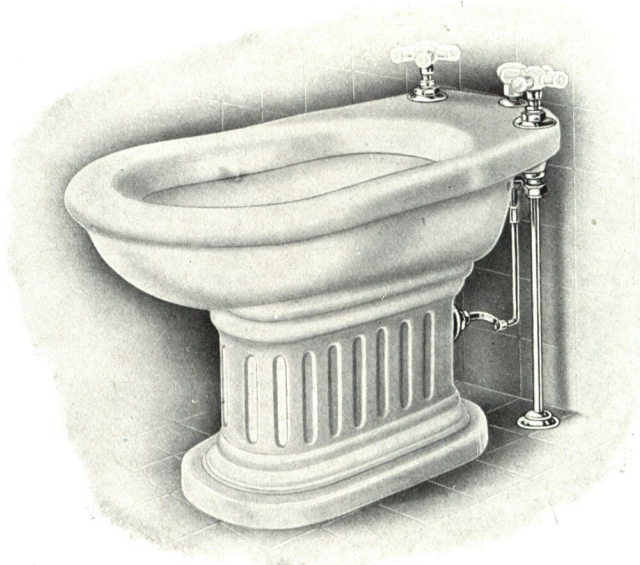


Plate 7910

Plate 7910

Namanco Vitreous China Flushing Rim Bidet, with the latest Improved Combined Supply Feature to Bidet and Flushing Rim, fitted with Nickel-plated Compression Supply Valves with Solid China Cross Handles and Fulton Pop-up Waste with China Knob.

Dimensions

Height.....	15 inches
Length.....	24 inches
Width.....	14 $\frac{1}{4}$ inches
As described.....	30.00

The Namanco is a new departure in the Bidet, doing away with the complicated jet feature and other unnecessary parts. It is so arranged that the supply of water feeds into the bowl, thereby eliminating the danger of being scalded. The user faces the supply valves which, as can be seen, are only two in number and operate the same as on any lavatory. As a sanitary, moderate priced Bidet or Foot Bath, the Namanco has no equal and no modern bath room is complete without this fixture.

Plate 7911

The Franco Vitreous China Flushing Rim Bidet with Jet or Spray Head, fitted with Nickel-plated Compression Supply Fixture and Reliance Waste with China Index Handles.

This fixture is furnished with Nickel-plated Spray Head which can be removed and ordinary Syringe Nozzle used if so desired.

As described..... 45.50

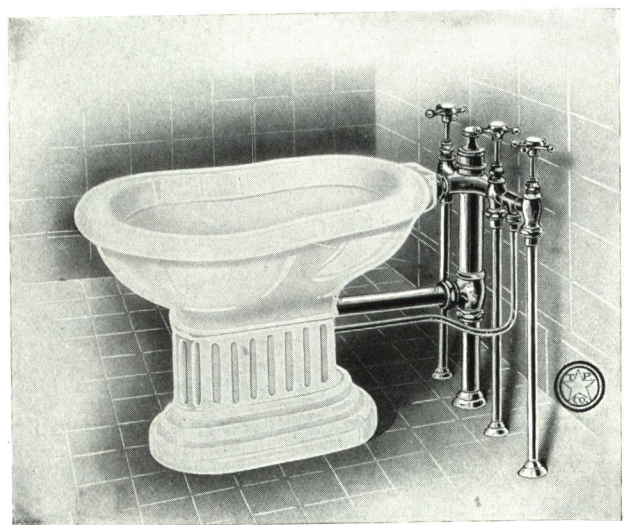


Plate 7911

Nason Silent Syphon Jet Closet

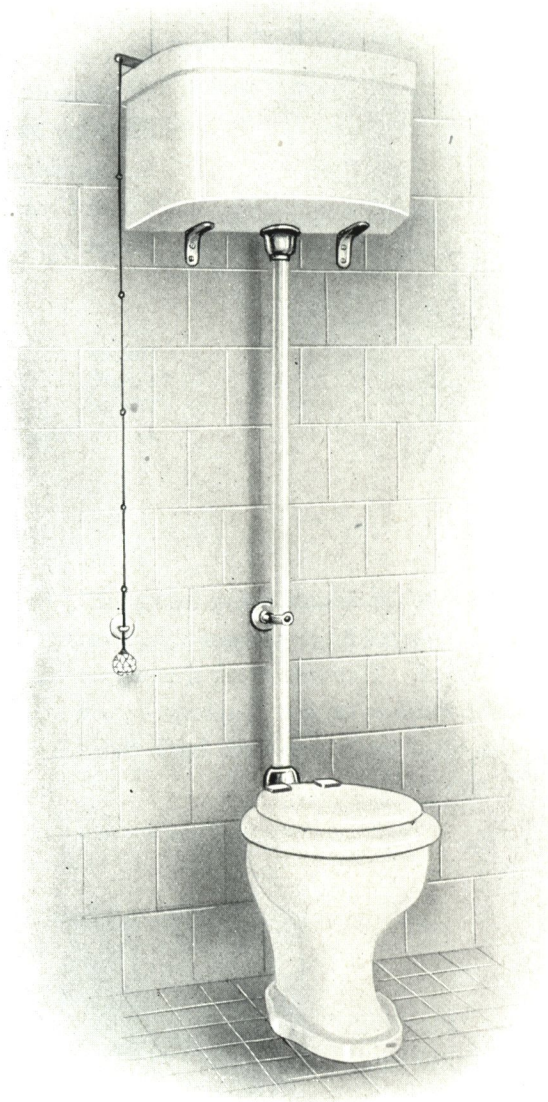


Plate 7920

Silent Syphon Jet Closet with Security Screwed Outlet Connection, No. 225 Cellu-White Seat and Cover with Nickel-plated Brass Adjustable Post Hinges, Cellu-White Covered Brass Flush Pipe with Holder, "Bee Hive" Escutcheons Nickel-plated Brass, Vitreous China 8-Gallon Cistern with No. 10 Guide Rod, Links and Cut Glass Pull..... 75.00

The Silent Closet is especially constructed to make it noiseless in operation.

Nason-Baltic Syphon Jet Closet

With Extended Lip

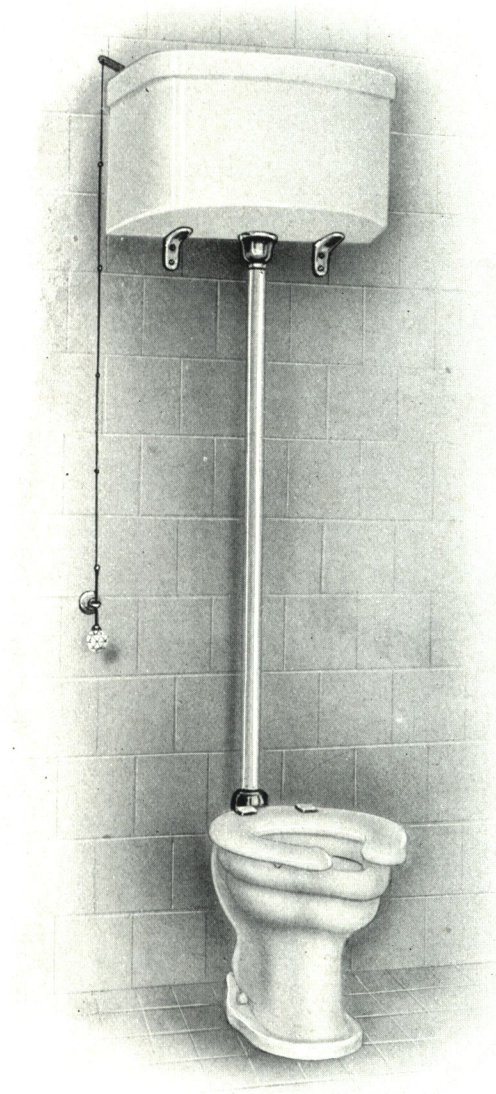


Plate 7930

Nason-Baltic Syphon Jet Closet with Extended Lip, No. 256 Cellu-White Open Seat without Cover with Nickel-plated Brass Adjustable Post Hinges, Cellu-White Brass Flush Pipe with Holder, "Bee-Hive" Escutcheons Nickel-plated Brass, Vitreous China 8-Gallon Cistern with No. 10 Guide Rod, Links and Cut Glass Pull, Brass Floor Flange and Bolts with China Bolt Caps..... 75.00

Nason-Fulton Syphon Jet Closet

With Security Screwed Outlet Connection

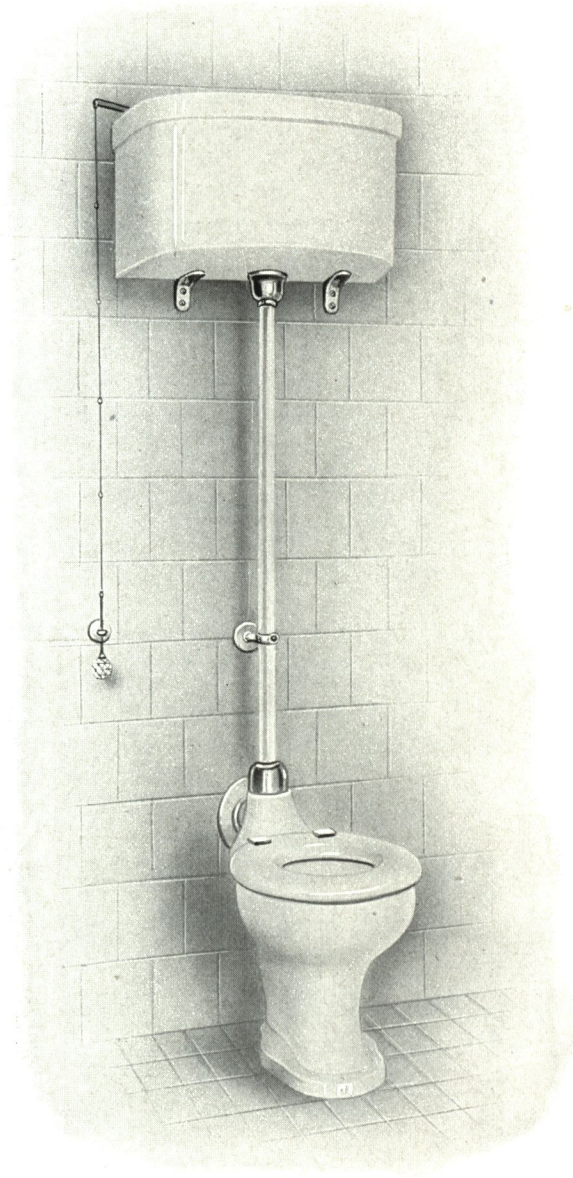


Plate 7940

Nason-Fulton Syphon Jet Closet with Security Screwed Outlet Connection with Rear Raised Vent and China Wall Flange, No. 225 Cellu-White Seat without Cover with Nickel-plated Brass Adjustable Post Hinges, Cellu-White Covered Brass Flush Pipe with Holder, "Bee-Hive" Escutcheons Nickel-plated Brass, Vitreous China 8-Gallon Cistern with No. 10 Guide Rod, Links and Cut Glass Pull..... 80.00

Nason-Fulton Syphon Jet Closet

With Security Screw Outlet Connection

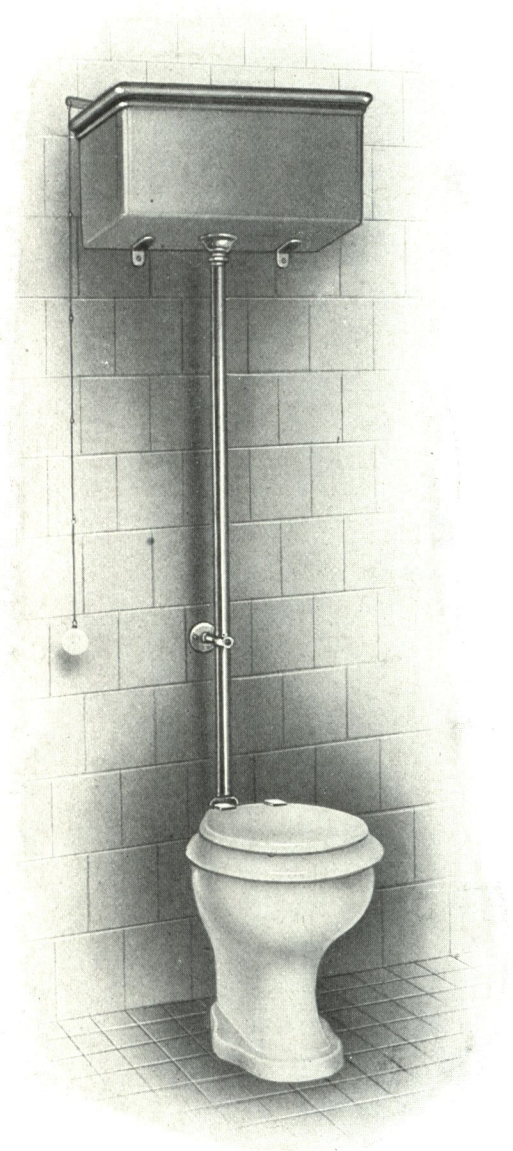


Plate 7950

Nason-Fulton Syphon Jet Closet with Security Screw Outlet Connection, with No. 225 Cellu-White Seat and Cover with Nickel-plated Brass Adjustable Post Hinges, Nickel-plated Flush Pipe and Holder, No. 9 Monarch Hardwood Cistern, No. 1 Pull and Links, with Nickel-plated Brass Brackets.....

45.00

If Seat and Cover are furnished in Natural or Golden Oak, deduct.....

6.00

Nason-York Syphon Jet Closet

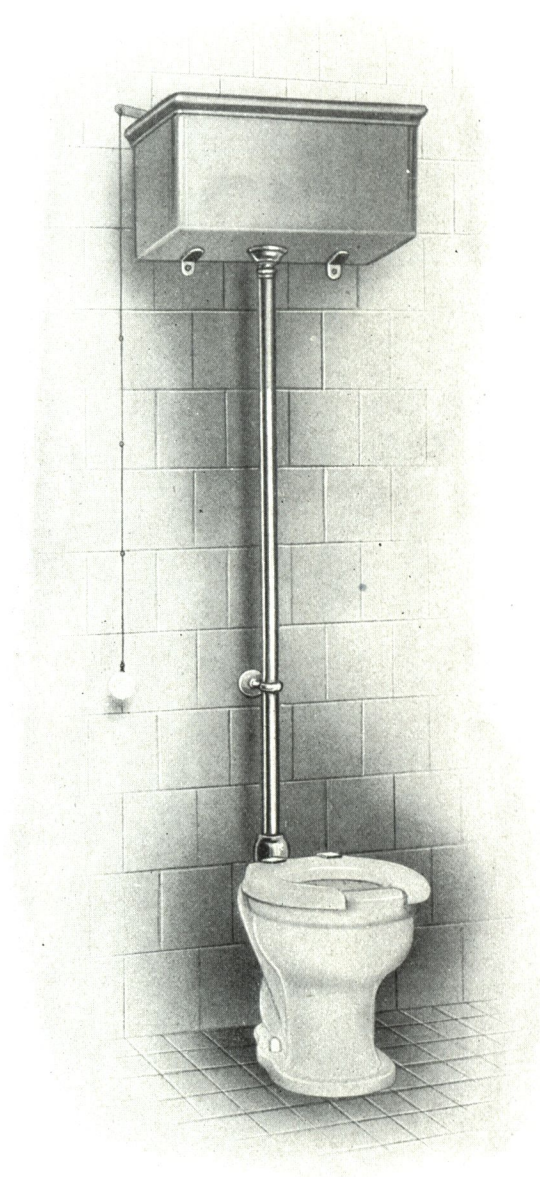


Plate 7960

Nason-York Syphon Jet Closet with Sanitary Lip, No. 250 Cellu-White Open Seat without Cover, with Nickel-plated Brass Adjustable Post Hinges, Nickel-plated Flush Pipe and Holder, No. 9 Monarch Hardwood Cistern, No. 1 Pull and Links, Nickel-plated Brass Brackets, Brass Floor Flange, Bolts and China Bolt Caps.....		40.00
If Seat is furnished in Natural or Golden Oak, deduct.....		5.00

Nason-York Syphon Jet Closet

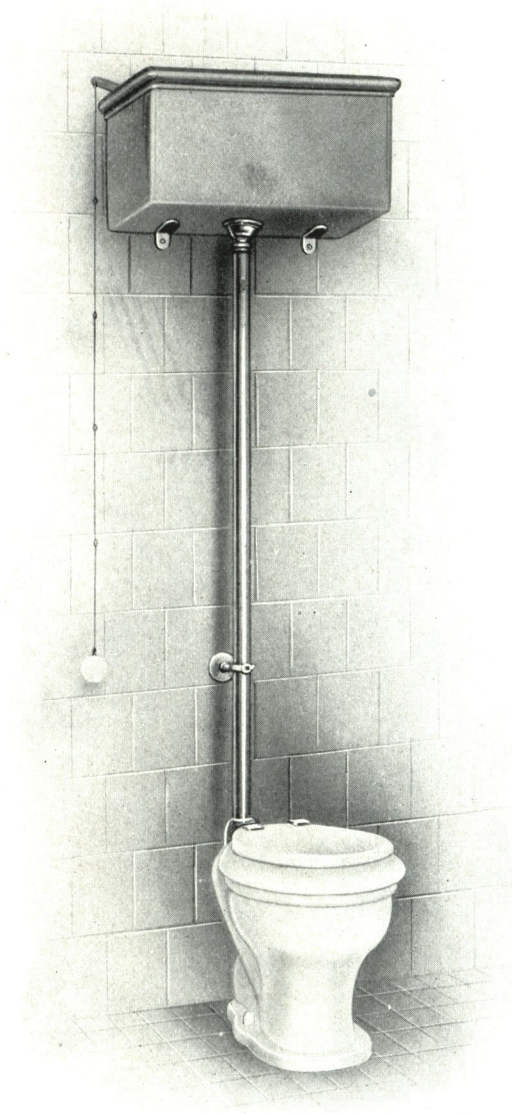


Plate 7970

Nason-York Syphon Jet Closet with No. 225 Cellu-White Seat and Cover with Nickel-plated Brass Adjustable Post Hinges, Nickel-plated Flush Pipe and Holder, No. 9 Monarch Hardwood Cistern, No. 1 Pull and Links and Nickel-plated Brass Brackets, Brass Floor Flange, Bolts and China Bolt Caps.....		38.00
If Seat and Cover are furnished in Natural or Golden Oak, deduct.....		6.00

Nason-Boston Syphon Jet Closet

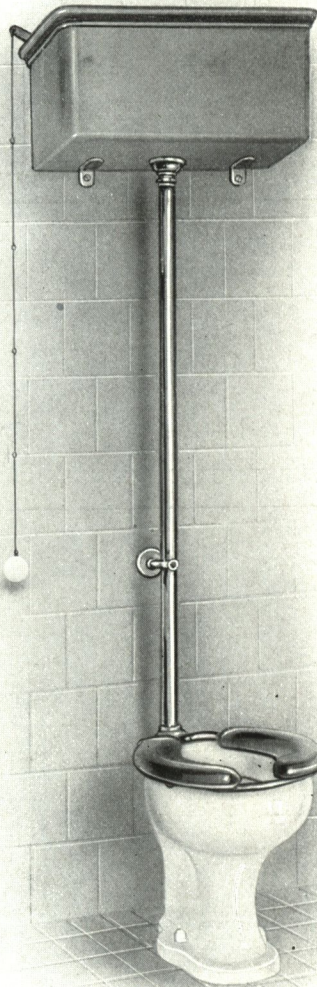


Plate 7980

Nason-Boston Syphon Jet Closet, Hartford Natural Oak Open Seat without Cover with Nickel-plated Brass Front Reinforcing Bar and Nickel-plated Brass Bar Hinges, Nickel-plated Flush Pipe and Holder and No. 9 Monarch Hardwood Cistern, No. 1 Pull and Links, Nickel-plated Brass Brackets, Brass Floor Flange, Bolts and China Bolt Caps..... 32.50

Nason-Boston Syphon Jet Closet

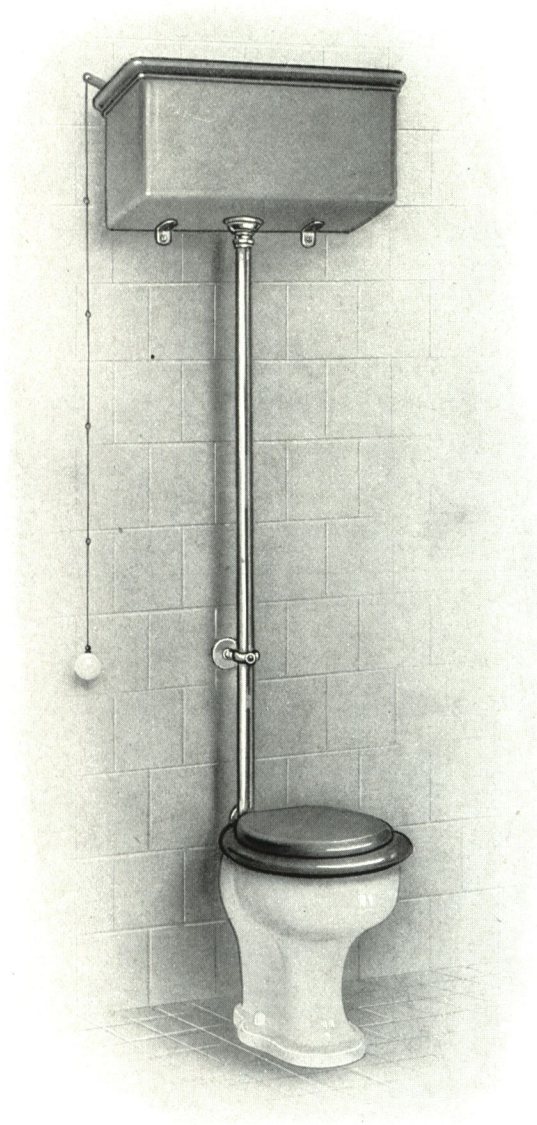


Plate 7990

Nason-Boston Syphon Jet Closet, No. 800 Natural Oak Cabinet Finish Non-split Seat with Cover with Nickel-plated Brass Bar Hinges, Nickel-plated Flush Pipe and Holder, No. 9 Monarch Hardwood Cistern, No. 1 Pull and Links, Nickel-plated Brass Brackets, Brass Floor Flange, Bolts and China Bolt Caps..... 30.00

Namanco Syphon Jet Closet

With Extended Lip

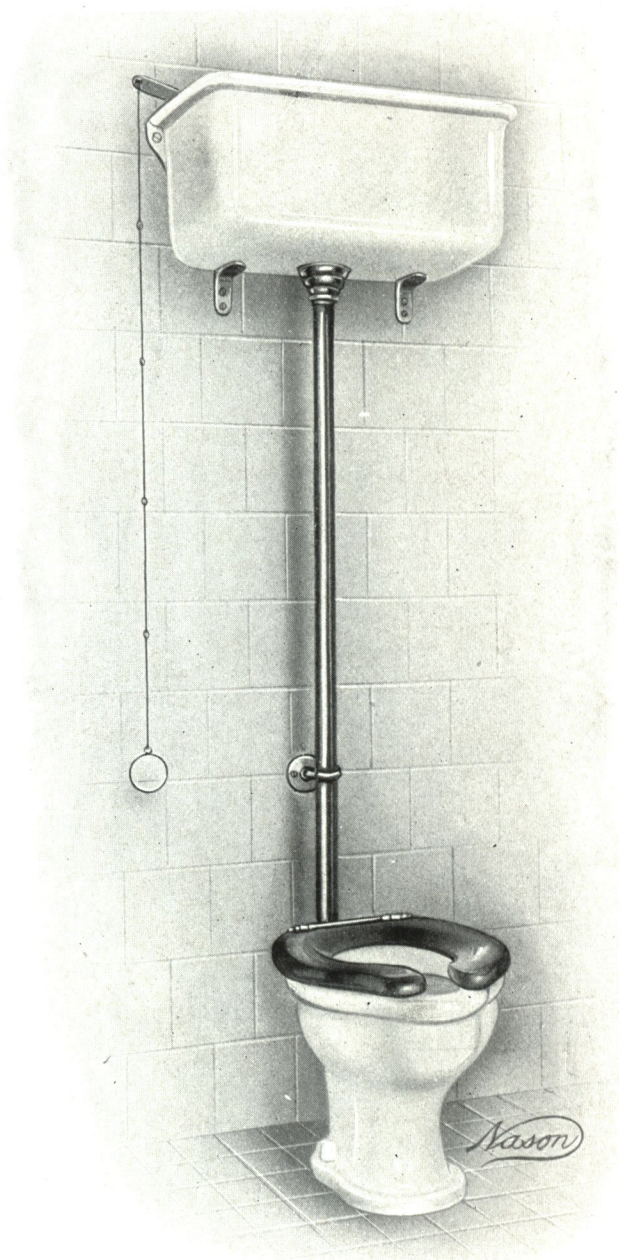


Plate 8000

Namanco Syphon Jet Closet with Extended Lip, No. 170 Cabinet Finish Oak Open Seat without Cover with Brass Reinforcing Plate and Nickel-plated Brass Bar Hinges, Nickel-plated Flush Pipe and Holder, 8-Gallon Cast Iron Porcelain Enameled (inside and outside) Cistern with All Brass Flush and Supply Fittings, No. 2 Nickel-plated Link and Ring Pull, Brass Floor Flange, Bolts and China Bolt Caps.....		35.00
If the Cistern is enameled inside only and painted outside, deduct		1.75
If the Cistern is painted inside and outside, deduct		3.50
If the Cistern is No. 9 Monarch Hardwood, deduct.....		4.00
Note: See Plate 7410A for top view of Closet.		

Namanco Syphon Jet Closet

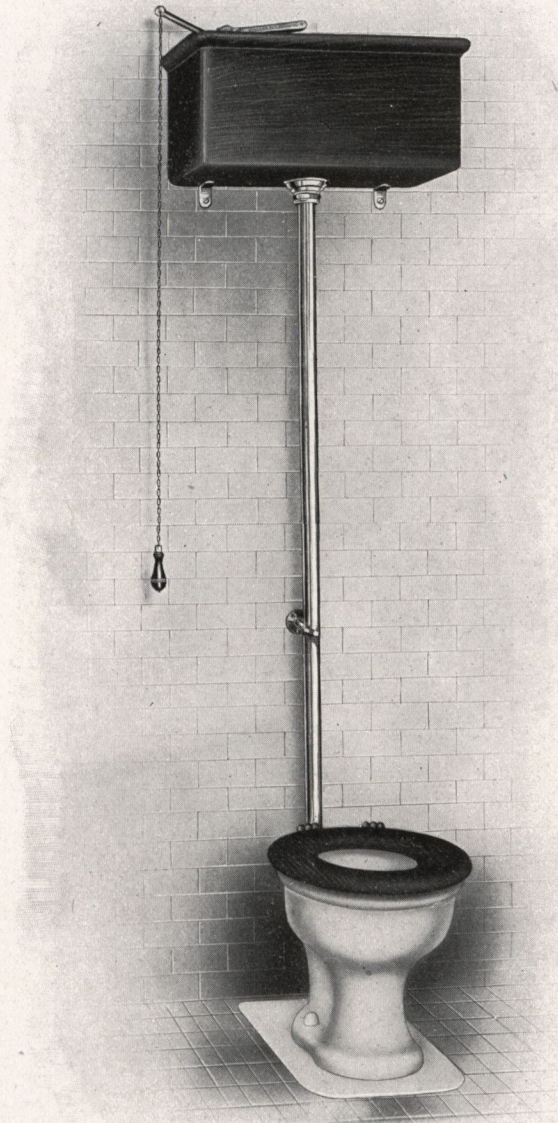


Plate 8010

Namanco Syphon Jet Closet, No. 800 Cabinet Finished Oak Non-split Seat and Nickel-plated Brass Bar Hinges, Nickel-plated Flush Pipe and Holder, No. 9 Monarch Hardwood Cistern, Brass Floor Flange, Bolts and China Bolt Caps.....	25.00
If Seat is with Cover, add.....	.75
If with No. 800 Cellu-White Seat and Cover, add.....	4.50
Porcelain Floor Slab, as shown, extra.....	3.50

Nason Barracks Syphon Jet Closet

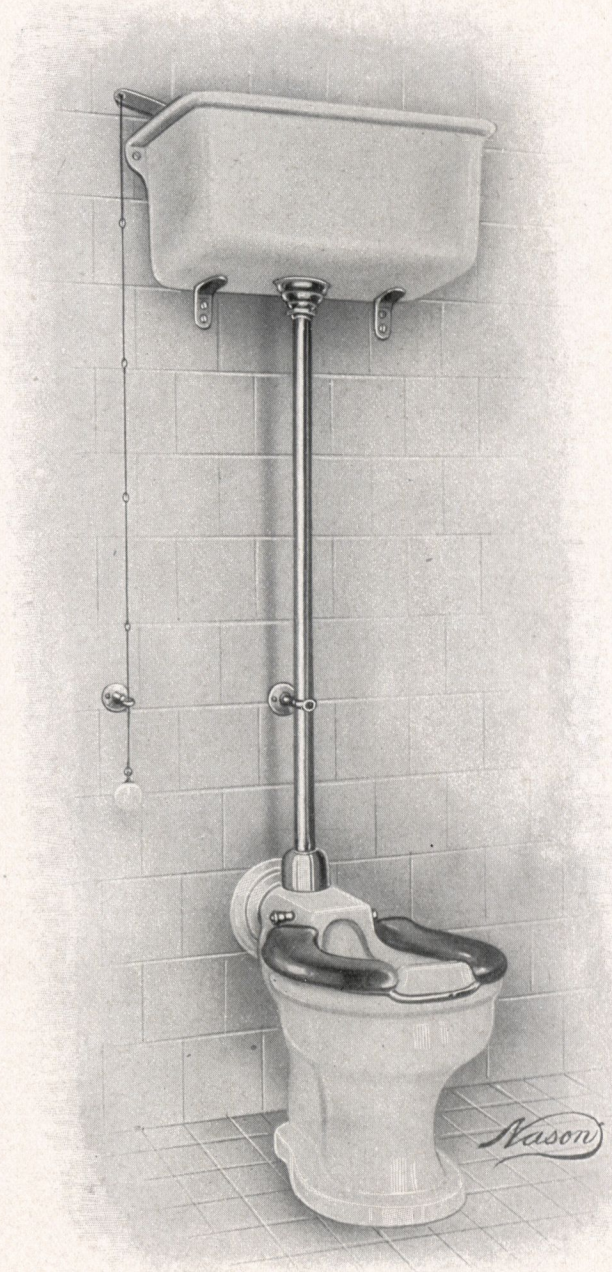


Plate 8020

Barracks Syphon Jet Closet with Raised Rear Vent and Porcelain Wall Flange, Sanitary Lip, with Security Screw Outlet Connection, Hartford Natural Oak Open Seat without Cover, with Nickel-plated Side Post Hinges and Front Reinforcing Bar, Nickel-plated Flush Pipe and Holder, 8-Gallon Cast Iron Porcelain Enameled (inside and outside) Cistern with All Brass Flush and Supply Fittings, No. 1 Pull and Links with Wall Guide, "Bee-Hive" Nickel-plated Escutcheon, Porcelain Wall Plate.....

61.00

A glance will suffice to show that the Barracks is the cleanest and most sanitary Closet ever designed.

Nason Syphon Jet Closet

De Luxe

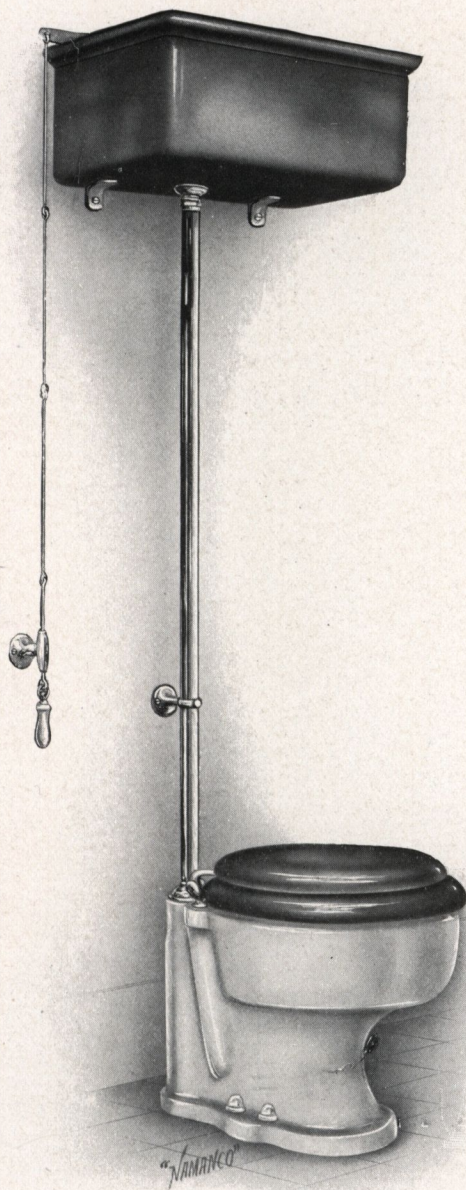


Plate 8030

The De Luxe Syphon Jet Water Closet, with No. 675 Mahoganzed Birch Seat and Cover, Nickel-plated Flush Pipe and Holder, and No. 9 Mahoganzed Birch Tank, Brass Floor Flange and China Bolt Caps.

Complete as described..... 44.00

For detailed description see Plate 7520

Nason Infant Syphon Jet Closet

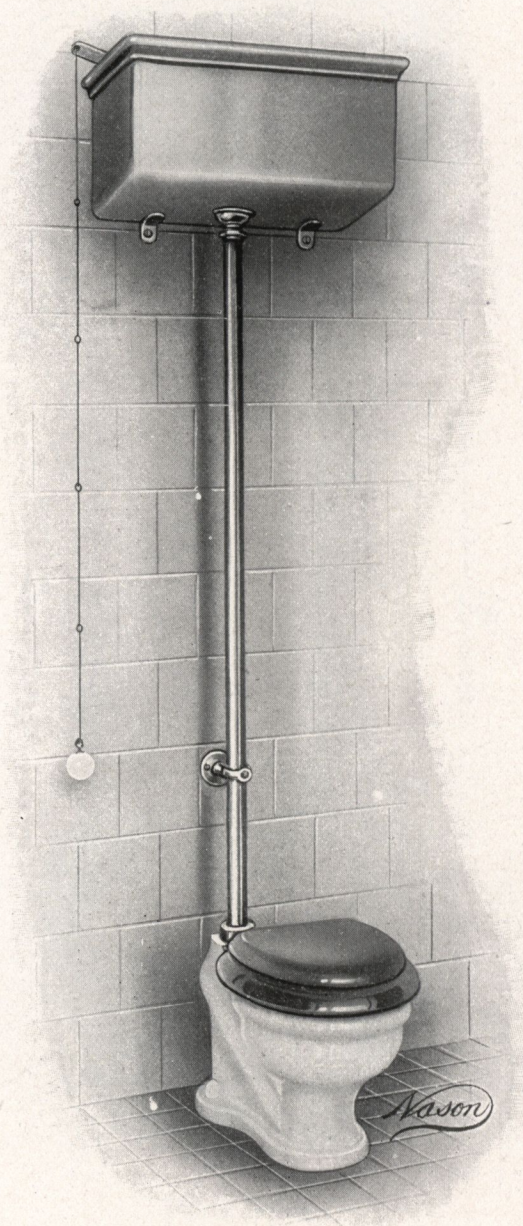


Plate 8040

Nason Infant Syphon Jet Closet (9 inches high), Natural Oak Cabinet Finish Special Seat and Cover with Nickel-plated Brass Bar Hinges, Nickel-plated Flush Pipe and Holder, No. 9 Monarch Hardwood Cistern with No. 1 Pull and Links, Nickel-plated Brass Brackets, Brass Floor Flange, Bolts and China Bolt Caps..... 30.00

Nason Syphon Down-Jet Closet

Juvenile

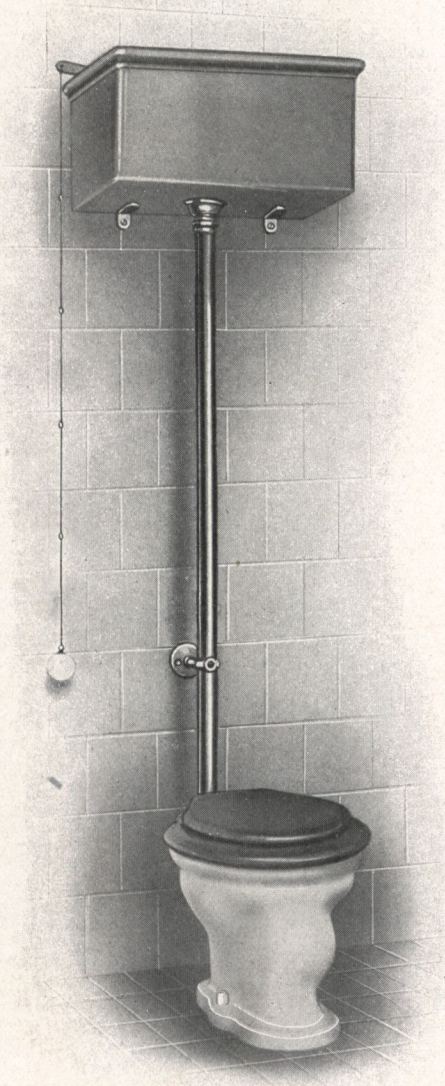


Plate 8050

Juvenile Syphon Down-jet Closet, No. 677 Cabinet Finish Oak Non-split Seat with Cover, and Nickel-plated Brass Post Hinges, Nickel-plated Flush Pipe and Holder, No. 9 Monarch Hardwood Cistern, No. 1 Pull and Links, Nickel-plated Brass Brackets, Brass Floor Flange, Bolts and China Bolt Caps.....

25.00

Nason Syphon Down-Jet Closet

Mammoth

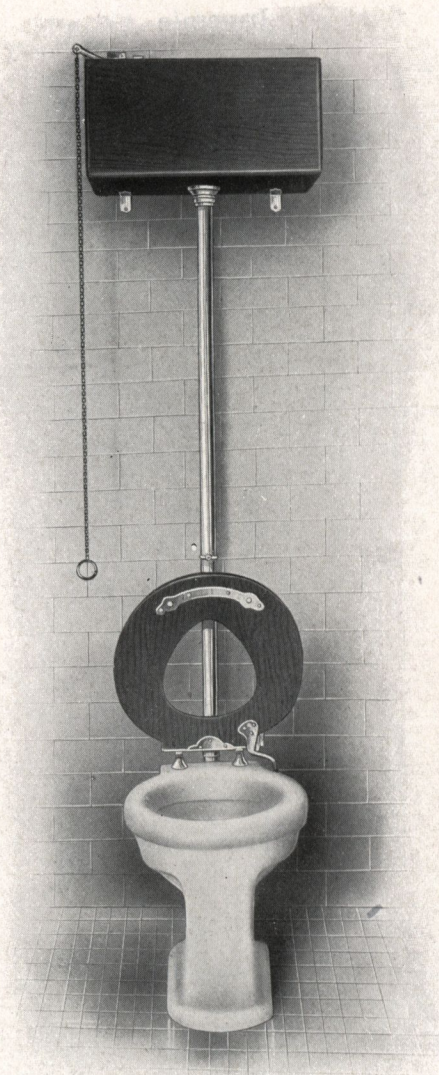


Plate 8060

Nason-Mammoth Extra Heavy (65 pounds) Vitreous China Syphon Down-jet Closet, Special Non-split Extra Heavy Oak Seat with Nickel-plated Brass Reinforcing Plate and Ball Weight Hinge Attachment, Heavy Brass Flushing Pipe and Holder, No. 9 Monarch Oak Tank, with Brackets, Chain and Ring Pull, Heavy Brass Floor Flange, Bolts and China Bolt Caps. 38.00

If Seat is wanted without Ball Weight Raising Attachment, deduct. 3.50

The Nason-Mammoth is an extra heavy piece of solid vitreous china, weighing 65 pounds, and is especially adaptable for factories and public toilet rooms, where a closet is required to stand rough usage.

Note: For sectional view of No. 9 Monarch Tank, see Plate 8380.

Nason Extra Heavy Washdown Closet

Giant

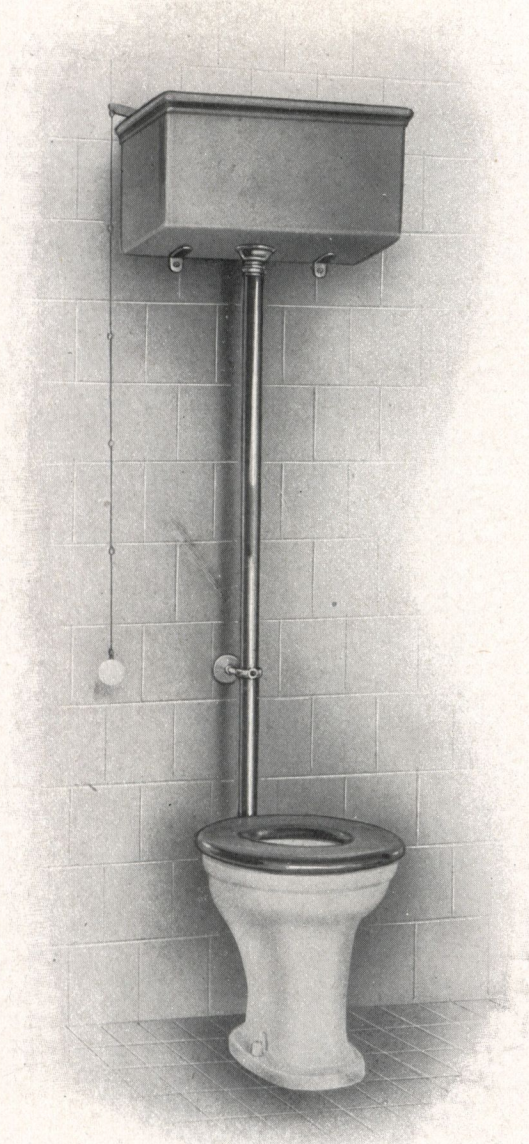


Plate 8070

Nason-Giant Extra Heavy Vitreous China Washdown Closet, Non-split Extra Heavy Oak Seat with Nickel-plated Brass Bar Hinges, Nickel-plated Flush Pipe and Holder, No. 9 Monarch Hardwood Cistern, No. 1 Pull and Links, Nickel-plated Brass Brackets, Brass Floor Flange, Bolts and China Bolt Caps 32.50

Nason Syphon Down-Jet Closet

With Sanitary Lip

Bayou



Plate 8080

Bayou Syphon Down-jet Closet with Sanitary Lip, Security Screw Outlet Connection, No. 170

Cabinet Finish Oak Open Seat without Cover, with Brass Reinforcing Plate, Nickel-plated Brass Bar Hinges, Nickel-plated Flush Pipe and Holder, No. 9 Monarch Hardwood Cistern, No. 1 Pull and Links, Nickel-plated Brass Brackets.....

32.50

If with No. 250 Cellu-White Seat without Cover, add.....

4.75

Nason Syphon Down-Jet Closet

Integral Seat

Bayou

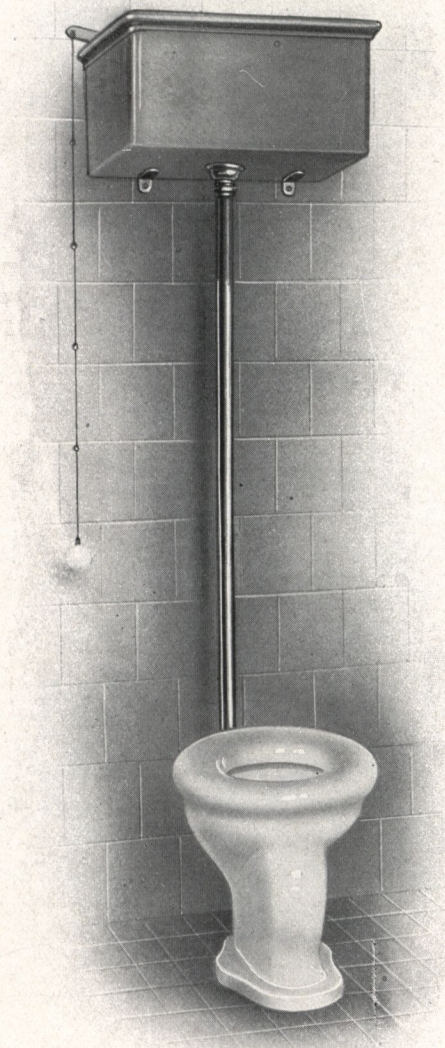


Plate 8090

Bayou Syphon Down-jet Closet with Integral Crockery Seat, Security Screw Outlet Connection,
Nickel-plated Flush Pipe and Holder, No. 9 Monarch Hardwood Cistern, No. 1 Pull and
Links, Nickel-plated Brass Brackets.....

32.50

Nason Syphon Down-Jet Closet

Willard

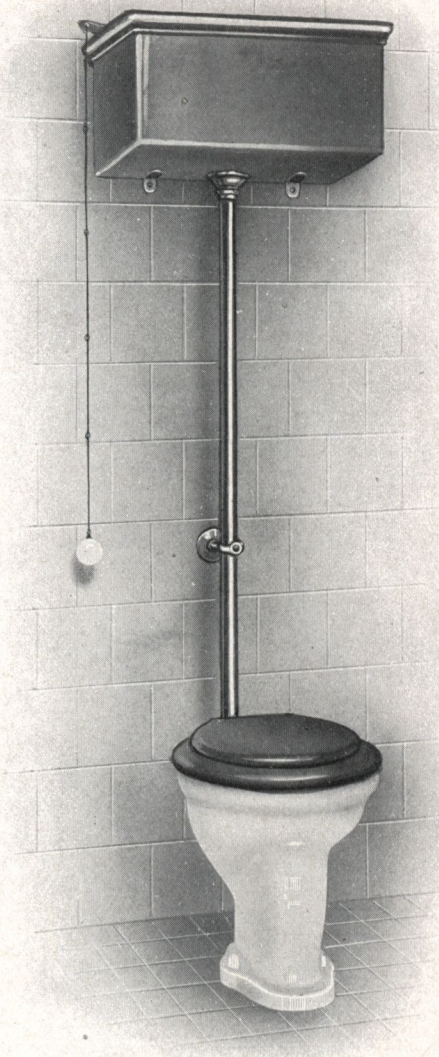


Plate 8100

Willard Syphon Down-jet Closet, No. 677 Cabinet Finish Oak Non-split Seat with Cover, with Nickel-plated Brass Post Hinges, Nickel-plated Flush Pipe and Holder, No. 9 Monarch Hardwood Cistern, No. 1 Pull and Links, Nickel-plated Brass Brackets, Brass Floor Flange, Bolts and China Bolt Caps..... 29.00

Nason Syphon Down-Jet Closet

Willard

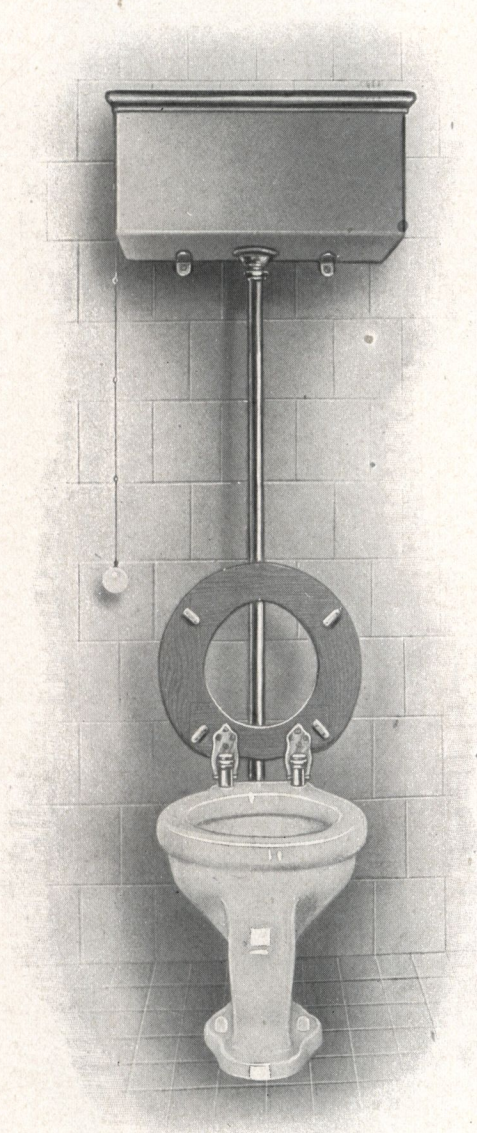


Plate 8110

Willard Syphon Down-jet Closet, Cabinet Finish Oak Self-raising Seat without Cover, Nickel-plated Brass Spring Hinges, Nickel-plated Flush Pipe and Holder, No. 9 Monarch Hardwood Cistern, No. 1 Pull and Links, Nickel-plated Brass Brackets, Brass Floor Flange, Bolts and China Bolt Caps..... 30.00

Nason Washout Closet

Weldon

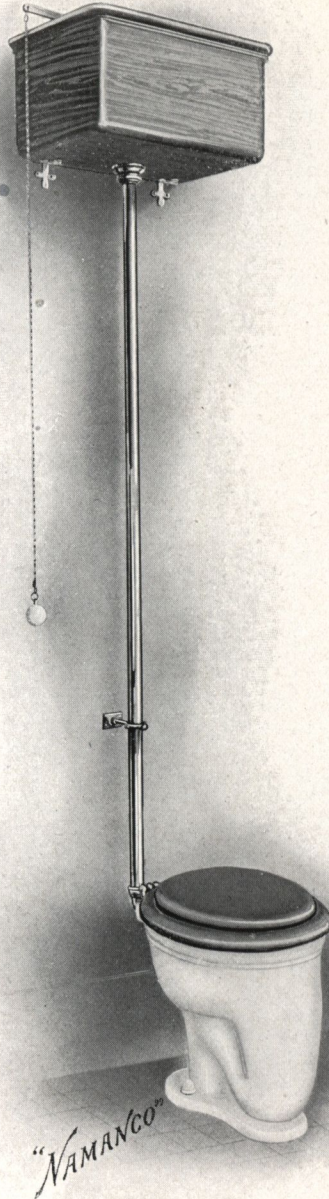


Plate 8120

Nason Weldon Washout Closet, with Natural Oak Seat and Cover, Nickel-plated Brass Flush
Pipe and Holder, No. 7 Natural Oak Tank, Brass Floor Flange, Bolts and China Bolt Caps 22.00

Nason Syphon Jet Closet

Primal

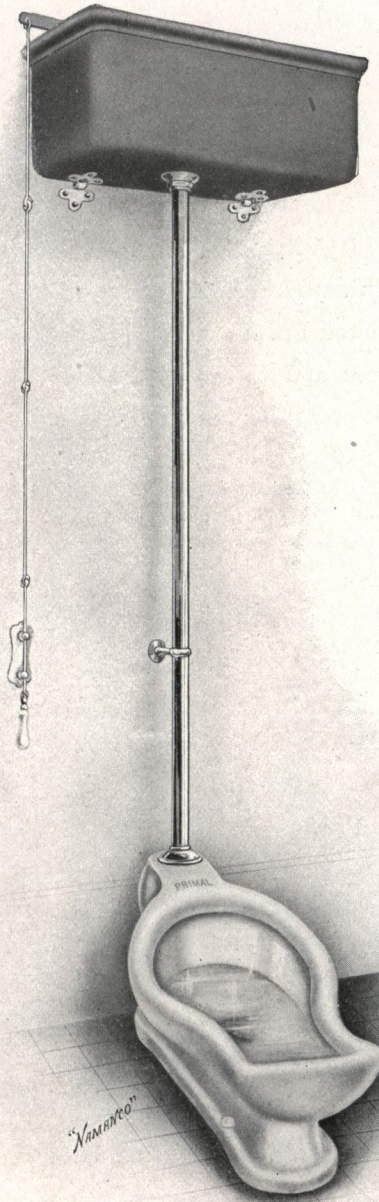


Plate 8130

Nason Primal Syphon Jet Closet, Nickel-plated Flush Pipe and Holder, No. 9 Monarch
Hardwood Cistern with No. 3 Guide Rods and Links with China Pull, Brass Floor Flange,
Bolts and China Bolt Caps.....

35.00

For detailed description see plate 7840.

Nason Closet Combinations

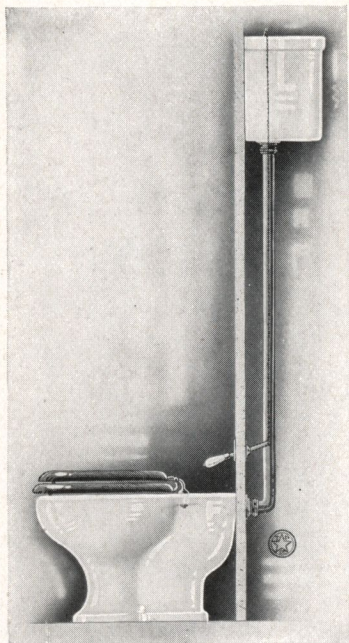


Plate 8140

Plate 8140

The Waldo Vitreous China Back Supply Syphon Jet Closet, with Vitreous China High Tank Concealed behind wall, with China Handle Operating Device coming through wall, Nickel-plated Flush Pipe and Connections, Mahoganized Birch Non-split Seat and Cover with Nickel-plated Hinges, Brass Floor Flange, Bolts and China Bolt Caps.

As described..... 48.00

Plate 8141

The Lewis Vitreous China Syphon Jet Closet, with Seat Operating Device, Natural Oak Seat without Cover, Vitreous China Round Front High Tank with Concealed Hanger, Nickel-plated Flush Pipe, Brass Floor Flange, Bolts and China Bolt Caps.

As described..... 62.50

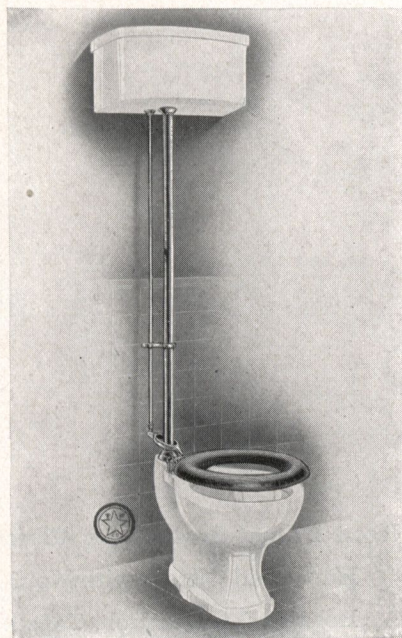


Plate 8141

Nason Syphon Down-Jet Closet

The Seat-flush. Juvenile Size, 14 inches high

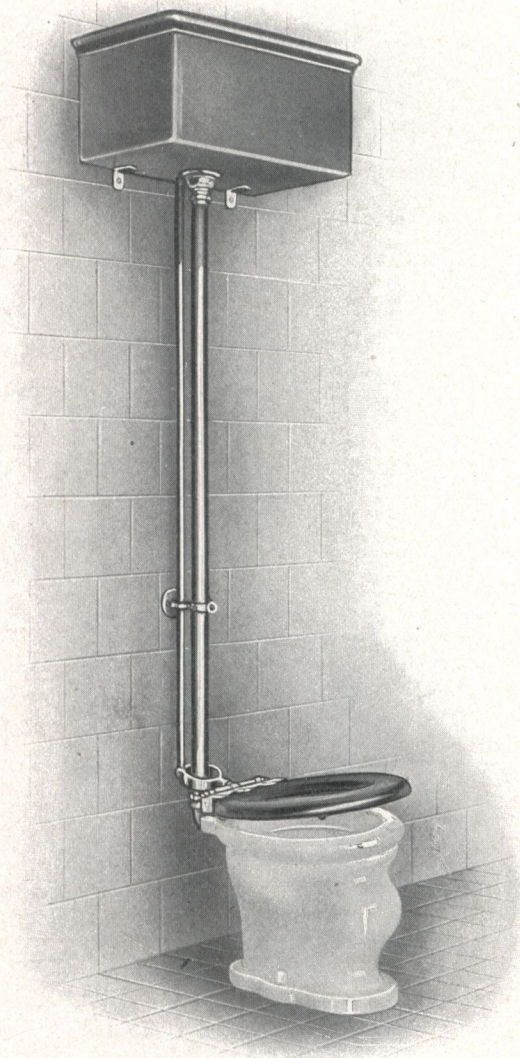


Plate 8150

The Seat-flush Syphon Down-jet Closet, with Automatic Oak Seat, with Nickel-plated Brass Lifting Rod, Oak Cistern, Nickel-plated Flush Pipe, Brass Floor Flange and China Bolt Caps.....	42.00
If the Seat is fitted with Counterbalance Galvanized Ball Weights for Raising Seat, add.....	5.00

Nason Syphon Down-Jet Closet

The Seat-flush. Adult Size, 16 inches high



Plate 8160

The Seat-flush Syphon Down-jet Closet, with Automatic Oak Seat, with Nickel-plated Brass Lifting Rod, Oak Cistern, Nickel-plated Flush Pipe, Brass Floor Flange and China Bolt Caps. 42.00

If the Seat is fitted with Counterbalance Galvanized Ball Weights for Raising Seat, add 5.00

Nason Automatic Seat Action Closet

Medina

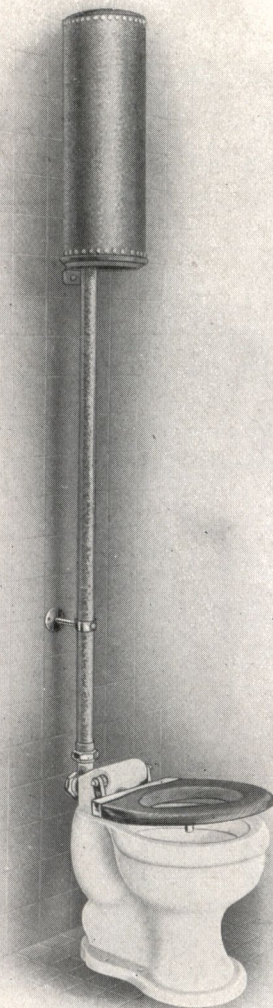


Plate 8170

The Medina Automatic Seat Action Syphon Jet Closet, with Galvanized Tank and Flush Pipe, Automatic Seat Action Valve, Golden Oak Seat, with Nickel-plated Brass Reinforcements.

As described 50.00

Made both 13 and 15 inches high.

Also furnished with Concealed Tank.

Nason Automatic Seat Action Closet

Doric

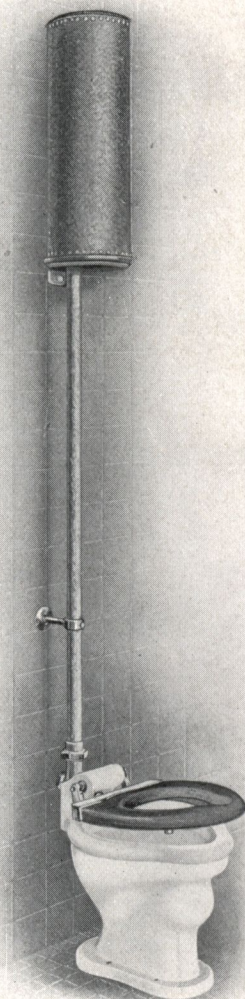


Plate 8180

The Doric Automatic Seat Action Wash Down Closet with Jet and Extended Front Lip, with Galvanized Tank and Flush Pipe, Automatic Seat Action Valve, Golden Oak Seat, with Nickel-plated Brass Reinforcements.

As described 45.00

Made both 13 and 15 inches high.
Also furnished with Concealed Tank.

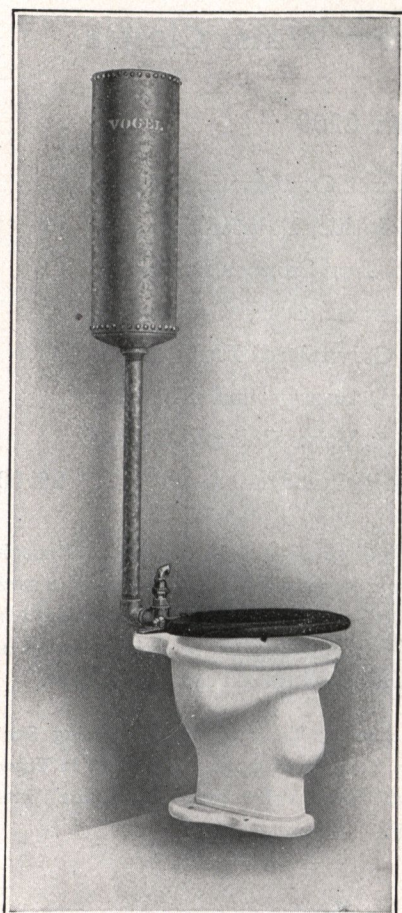


Plate 8190

Nason Automatic Water Closets

Plate 8190

Nason Automatic School, Factory and Comfort Station Water Closet Combination No. 9, consisting of Vitreous China Syphon Action Bowl, Brass Valve Nickeled, Heavy Golden Oak Seat, Galvanized Pressure Tank and Flush Pipe, Brass Floor Flange, Bolts and Washers.

Price as described	33.00
For Nickel-plated Supply Pipe, Fittings and Controlling Valve, add	4.25
For Syphon Jet Bowl, add	7.50
For Enameled Tank, add	4.25

The Valve used in this combination is simple in construction, having only two washers, which can be replaced without taking valve body from bowl.

Plate 8191

Nason Automatic Closet Combination, consisting of Extra Heavy Syphon Jet Bowl, Improved Automatic Valve, Golden Oak Seat with Nickel-plated Brass Reinforcement, Galvanized Pressure Tank Finished White Enamel Paint, Nickel-plated Flush Connection and Supply Pipe to floor with Stop, Brass Floor Flange with Bolts.

Price as described	49.00
If with Painted Iron Seat Reinforcements, Rough Brass Valve, Flush and Supply Connections with Stop	46.00



Plate 8191

Nason Frost-proof Water Closets

Plate 8200

Nason Frost-proof Water Closet Combination No. 1, consisting of Enameled Inside, Painted Outside, Tall Oval Flushing Rim, Iron Hopper Enameled Rim, Reinforced Hardwood Seat, Galvanized Steel Pressure Tank, Galvanized Flush Pipe, Lead Waste Connection, Supply and Flushing Valves assembled 3 $\frac{1}{4}$ foot, Valve Rod and Casing (Trap and Soil Pipe not included)..... 20.00

The No. 1 Closets use but four gallons of water for each flush. Enough water only enters the Tank to compress the air and no more water is used until the seat is again operated. This air and water pressure flush is strong and cleansing. The valve working parts can be easily removed in a few moments by simply unscrewing the one flush cap back of bowl.

Depressing Seat raises Rod, allowing Tank to fill. Releasing Seat allows a strong flush direct from Tank to Hopper. The water in Valve Casing then passes down through Waste Valve (below frost line), into sewer, leaving entire fixture empty.

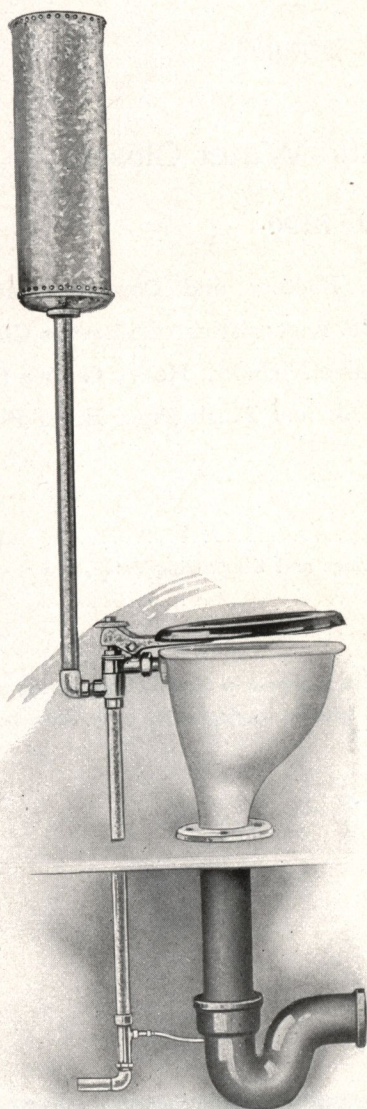


Plate 8200

Plate 8201

Nason Frost-proof Water Closet Combination No. 2 consists of Enameled Inside, Painted Outside, Tall Iron Hopper Enameled Rim and Brass Fan Wash, Hardwood Seat, Lead Waste Connection, Valve assembled with 3 $\frac{1}{4}$ -foot Valve Rod and Casing (Trap and Soil Pipe not included)..... 12.00

The No. 2 Outfit consists of one packing and flushes while in use, after which no water remains in fixture.

If Hoppers are required Enameled Outside instead of Painted Outside, add 2.50 each.

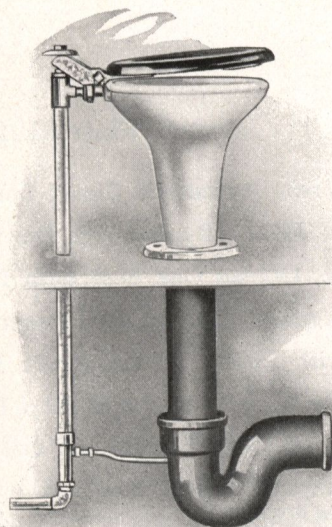


Plate 8201

Nason Automatic Range Closet

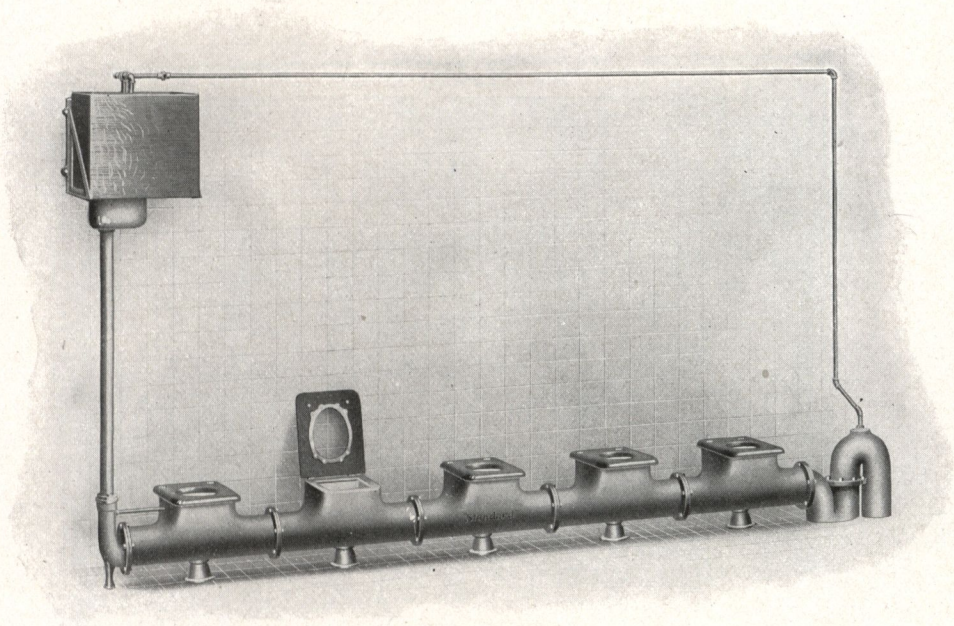


Plate 8210

Automatic Syphon Eduction Range Closet, with Copper-lined Wood Tank, Galvanized Iron Flush and Air Pipes, and Hinged Oak Seats with Iron Reinforcements.

Prices

No. Seats	24-inch Seats		27-inch Seats		30-inch Seats	
	Painted	Enameled	Painted	Enameled	Painted	Enameled
3	93.30	123.00	97.30	128.60	102.30	135.30
4	110.00	147.00	115.40	154.50	122.00	163.50
5	126.70	171.00	133.30	180.35	141.70	191.60
6	143.30	195.00	151.30	206.25	161.30	219.80
7	160.00	219.00	166.00	232.10	181.00	247.80
8	176.70	243.00	187.30	258.00	200.70	276.00
9	193.30	267.00	205.40	283.80	220.30	304.00
10	212.00	291.00	223.30	309.75	240.00	332.25
11	226.70	315.00	241.30	335.60	259.65	360.30
12	243.30	339.00	259.30	361.50	286.00	388.50
13	260.00	363.00	.....	.....	.....	.....
14	276.70	388.00	.....	.....	.....	.....
15	293.30	411.00	.....	.....	.....	.....

Painted Cast Iron Tank can be furnished without extra charge.

Range with Enameled Interior, 24-inch Seats, and Outlet on right-hand end as shown, will be furnished unless otherwise ordered.

Nason Automatic Range Closet

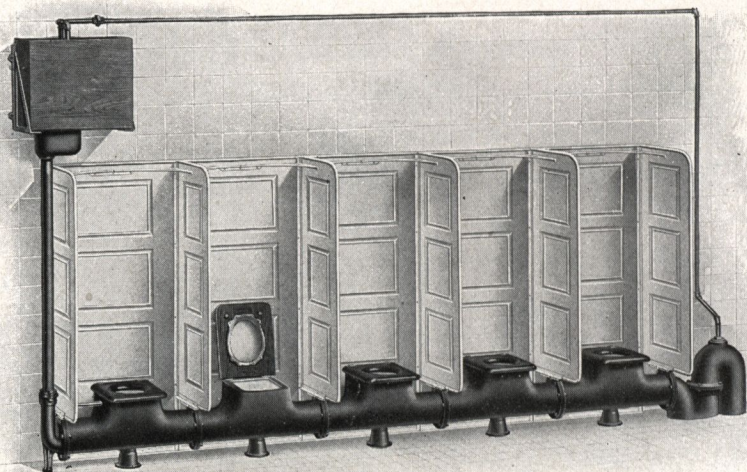


Plate 8220

Automatic Syphon Eduction Range Closet, with Copper-lined Wood Tank, Galvanized Iron Flush and Air Pipes, and Hinged Oak Seats with Iron Reinforcements and Pressed Steel Partitions.

Prices

No. Seats	24-inch Seats		27-inch Seats		30-inch Seats	
	Painted	Enameled	Painted	Enameled	Painted	Enameled
3	130.55	155.00	134.65	170.60	139.65	174.40
4	157.65	199.50	162.00	207.00	168.65	216.00
5	182.65	234.00	189.35	243.35	198.00	254.60
6	208.65	268.50	216.65	279.75	226.65	293.25
7	234.65	303.00	244.00	316.00	255.65	331.90
8	261.65	337.50	271.30	352.50	284.70	370.50
9	286.65	372.00	298.65	388.90	313.65	409.00
10	312.65	406.50	326.00	425.20	342.65	447.75
11	338.00	441.00	353.30	461.60	371.65	486.30
12	364.65	475.50	380.65	498.00	400.65	525.00
13	394.00	510.00	.....	.....	.....	.....
14	416.65	544.50	.....	.....	.....	.....
15	442.65	579.00	.....	.....	.....	.....

Painted Cast Iron Tank can be furnished without extra charge.

Range with Enameled Interior, 24-inch Seats and Outlet on right-hand end as shown, will be furnished unless otherwise ordered.

Nason Automatic Range Closet

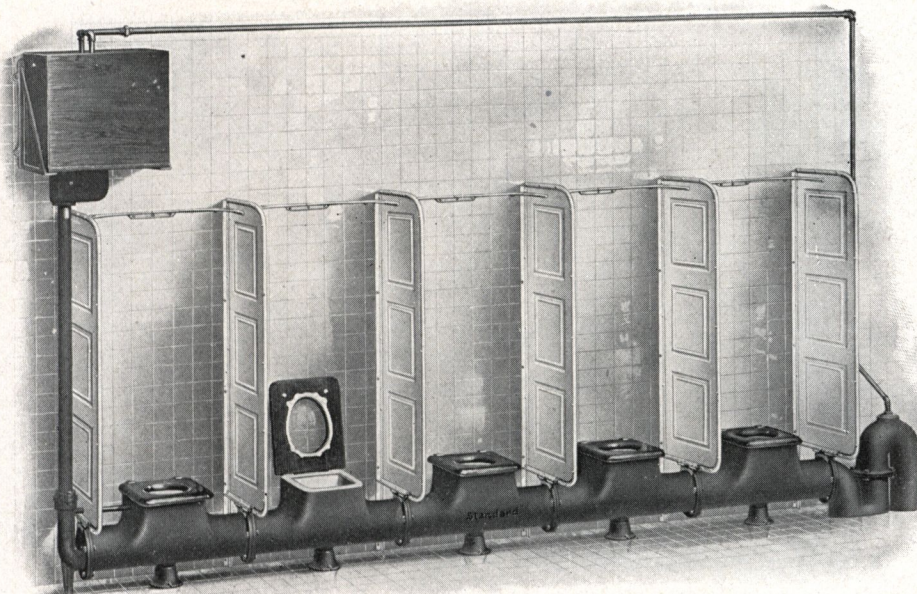


Plate 8230

Automatic Syphon Eduction Range Closet, with Copper-lined Wood Tank, Galvanized Iron Flush and Air Pipes, Hinged Oak Seats with Iron Reinforcements, and Pressed Steel Partitions and Backs.

Prices

No. Seats	24-inch Seats		27-inch Seats		30-inch Seats	
	Painted	Enameled	Painted	Enameled	Painted	Enameled
3	156.65	193.85	162.65	202.10	169.65	211.00
4	191.30	238.50	199.30	249.00	208.65	261.00
5	226.00	282.75	236.00	295.90	221.00	310.80
6	260.65	327.00	272.65	342.75	286.65	360.75
7	295.30	371.25	309.30	389.00	325.65	410.60
8	330.00	415.50	341.00	436.50	364.65	460.50
9	364.65	459.75	382.65	483.00	403.65	515.40
10	392.65	504.00	419.30	530.25	442.65	560.25
11	434.00	548.15	456.00	577.00	481.65	610.00
12	468.65	592.50	492.65	621.70	520.65	660.00
13	503.30	636.75	.....	.....	.....	.....
14	538.00	681.00	.....	.....	.....	.....
15	572.65	725.25	.....	.....	.....	.....

Painted Cast Iron Tanks can be furnished without extra charge.

Range with Enameled Interior, 24-inch Seats, and Outlet on right-hand end as shown will be furnished, unless otherwise ordered.

Nason Automatic Range Closet

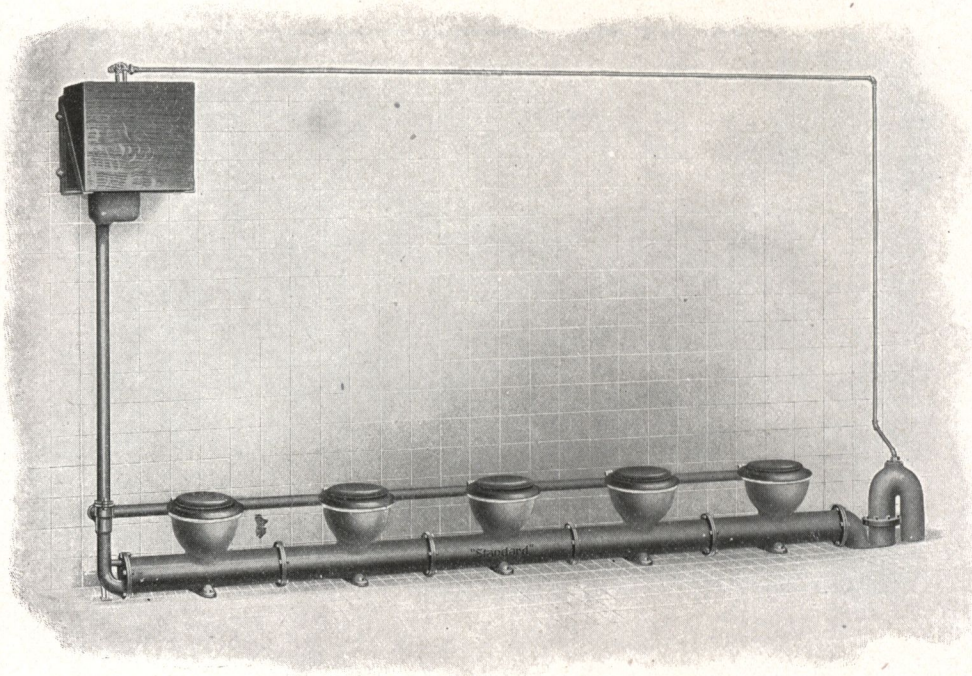


Plate 8240

Automatic Individual Bowl Syphon Range Closet with Copper-lined Wood Tank, Galvanized Iron Flush and Air Pipes, Brass Pipe and Union Couplings connected to the Flushing Rim of each Bowl, and Hinged Oak Seats with Iron Reinforcements and Covers.

Prices

No. Seats	24-inch Seats		27-inch Seats		30-inch Seats	
	Painted	Enameled	Painted	Enameled	Painted	Enameled
3	116.00	151.50	120.00	157.50	124.00	153.50
4	138.00	181.50	143.30	188.70	148.60	197.25
5	160.00	211.50	166.60	221.25	173.30	231.00
6	182.00	241.50	190.00	253.10	198.00	264.75
7	204.00	271.50	213.30	285.00	223.60	298.50
8	226.00	301.50	236.60	316.80	280.60	333.25

Painted Cast Iron Tank can be furnished without extra charge.

If without Cover on Seats, deduct each 1.00.

This Range can be furnished Double and also with Pressed Steel Partitions and Backs, if wanted. Prices on application.

Range with Enameled Interior, 24-inch Seats, and Outlet on right-hand end as shown will be furnished, unless otherwise ordered.

Nason Automatic Range Closet

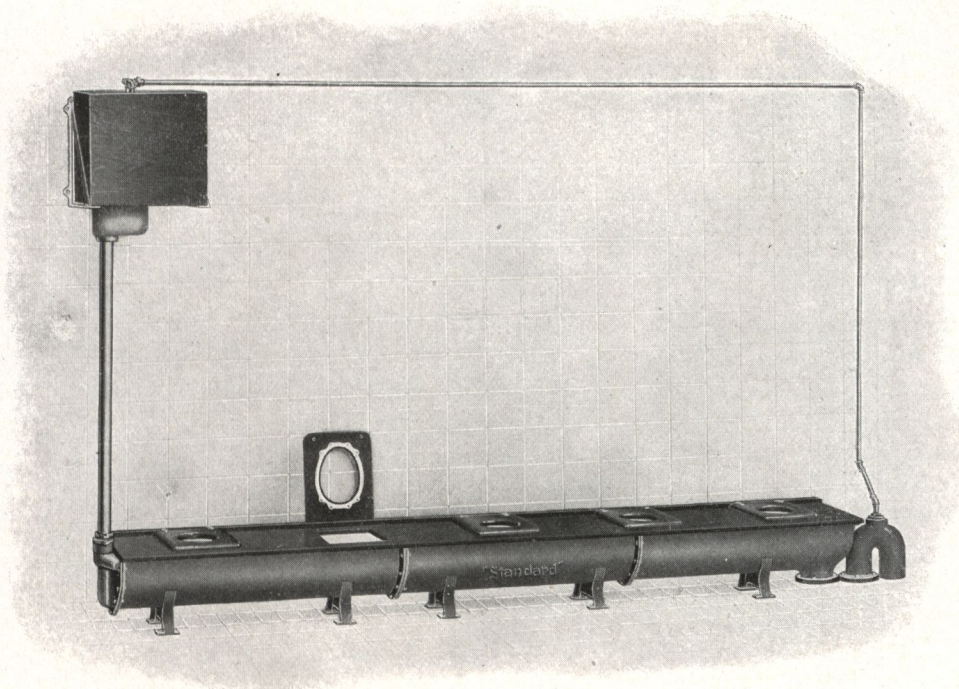


Plate 8250

Automatic Open Syphon Range Closet with Copper-lined Wood Tank, Galvanized Iron Flush and Air Pipes, Oak Top Plates and Back Strips, with Oak Hinged Seats with Iron Reinforcements and Perforated Wash-down Pipes fitted inside of Range. (Brass on Enameled and Galvanized Iron on Painted Ranges.)

Prices

No. Seats	24-inch Seats		27-inch Seats		30-inch Seats	
	Painted	Enameled	Painted	Enameled	Painted	Enameled
3	98.65	135.00	102.65	141.75	106.65	148.50
4	116.00	159.35	121.30	175.00	127.00	177.35
5	133.30	183.75	140.00	195.00	147.30	206.25
6	150.65	208.10	158.65	221.60	177.85	235.00
7	168.00	232.50	177.30	248.25	188.00	264.00
8	185.30	256.85	196.00	274.85	208.35	293.55
9	202.65	281.25	214.65	301.50	228.65	305.00
10	220.00	305.60	233.30	328.00	249.00	350.65
11	237.30	330.00	252.00	354.80	269.30	379.50
12	254.65	354.35	270.65	381.35	288.00	408.50
13	268.65	378.75	.....	.....	.....	.....
14	289.30	403.00	.....	.....	.....	.....
15	306.65	427.50	.....	.....	.....	.....

Cast Iron Tank can be furnished without extra charge.

This Range can be furnished Double and also with Pressed Steel Partitions and Backs if wanted. Prices on application.

Nason Automatic Range Closet

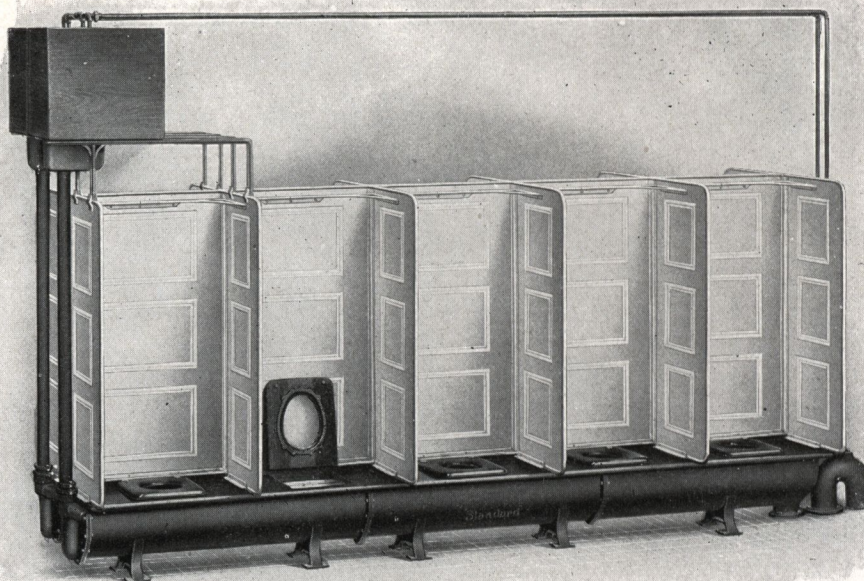


Plate 8260

Automatic Open Syphon Double Range Closet with Copper-lined Wood Tanks, Galvanized Iron Flush and Air Pipes, Hinged Oak Seats with Iron Reinforcements, and Pressed Steel Partitions and Backs and Perforated Wash Down Pipes fitted inside of Ranges.

Prices

No. Seats	24-inch Seats		27-inch Seats		30-inch Seats	
	Painted	Enameled	Painted	Enameled	Painted	Enameled
6	302.00	387.70	312.00	403.50	322.00	419.25
8	365.30	468.75	378.65	489.75	392.65	510.75
10	435.80	549.70	445.30	576.00	463.30	602.25
12	492.00	630.75	512.00	662.25	536.00	693.75
14	555.00	711.75	578.65	748.50	608.00	785.25
16	625.30	792.75	645.30	834.75	675.30	876.75
18	682.00	873.75	712.00	921.00	734.50	968.00
20	725.30	964.75	778.65	1007.25	816.65	1059.75
22	808.65	1015.75	845.30	1093.50	889.00	1151.25
24	872.00	1116.75	911.00	1179.75	958.00	1242.75
26	935.30	1197.75	.....	.....	.....	.....
28	998.65	1278.75	.....	.....	.....	.....
30	1062.00	1359.75	.....	.....	.....	.....

Painted Cast Iron Tanks can be furnished without extra charge.

Range with Enameled Interior, 24-inch Seats and Outlet on right-hand end as shown, will be furnished unless otherwise ordered.

Nason Steel Closet Stall Partitions

Plate 8270

Nason Steel Closet Stall Partitions

Plate 8271

Nason Steel Closet Open Stall Partitions with Tubular Frame front, top and bottom, Flanged Angle Iron on back, Standards with Flanges, and Top Rail with Wall Braces.

Plate 8272

Nason Steel Closet Enclosed Stall Partitions with Tubular Frame top and bottom, Flanged Angle Iron front and back, with either Style A or B Oak Door (see Plates 8274-5) for 30-inch wide enclosure, Top Rail and Wall Braces, shown on left of above illustration.

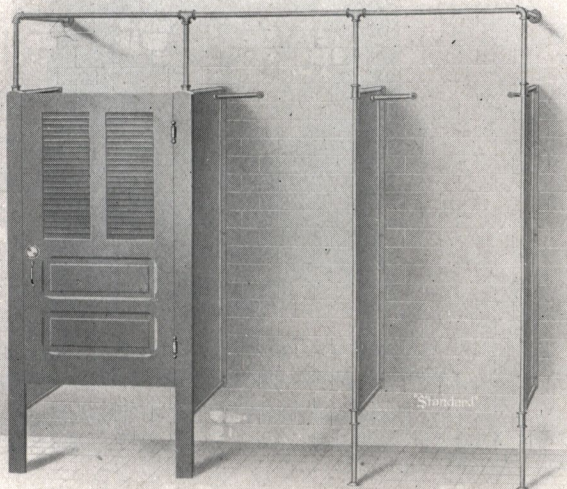


Plate 8270

Prices

Plate 8270 As illustrated. Two Open and one Enclosed Stall	110.00
For each additional Open Stall, add	23.00
For each additional Enclosed Stall, add	44.00
Plate 8271 One Open Stall as described	46.50
Plate 8272 One Enclosed Stall as described	66.50

Note: Closet Stall Partitions are 3 feet 6 inches wide, 5 feet high, with bottom of partition 12 inches from floor. Furnished with one coat of White Iron Filler. Larger Partitions can be furnished. Prices on application.

Steel Urinal Partitions

Plate 8273 (Not Illustrated)

Nason Steel Urinal Partitions with Wall Braces.

Plate 8273 As described, size 18 x 42 inches, each	20.00
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Oak Closet Stall Doors

Plate 8274

Style A Paneled Oak Door, with Nickel-plated Indicator Latch, Hand Pull and Spring Hinges.

Price for 27 or 30-inch Enclosure, each

24.00

Plate 8275

Style B Paneled and Slotted Oak Door, with Nickel-plated Indicator Latch, Hand Pull and Spring Hinges.

Price for 27 or 30-inch Enclosure, each

24.00

3-inch Stiles furnished with all doors.

When ordering doors always state width of Enclosure.

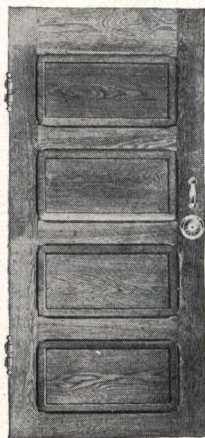


Plate 8274

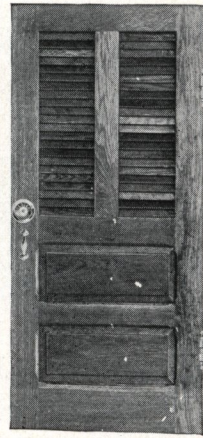


Plate 8275

Vitreous China Closets



Plate 8280

Vitreous China Syphon Jet Closet

Furnished with 1¼, 1½ or 2-inch Spud.

Each..... 18.00



Plate 8281

Vitreous China Syphon Jet Closet
with Raised Front Lip

Furnished with 1¼, 1½ or 2-inch Spud.

Each..... 19.00



Plate 8282

Vitreous China Syphon Jet Closet
with Extended Lip

Furnished with 1¼, 1½ or 2-inch Spud.

Each..... 19.00



Plate 8283

Vitreous China Syphon Jet Close
Roughing Closet

Furnished with 1¼, 1½ or 2-inch Spud.

Each..... 18.00



Plate 8284

Vitreous China Juvenile Syphon Jet Closet

Made 13 and 14 inches high. Furnished with 1¼, 1½
or 2-inch Spud.

Each..... 18.00



Plate 8285

Vitreous China Baby Syphon Jet Closet

Made 10 inches high. Furnished with 1¼, 1½ or
2-inch Spud.

Each..... 18.00

Vitreous China Closets



Plate 8290

Vitreous China Special Syphon Jet Closet
with Back Supply

Furnished with 1¼, 1½ or 2-inch Spud.

Each..... 12.50



Plate 8291

Vitreous China Special Syphon Jet Closet
with Extended Lip and Back Supply

Furnished with 1¼, 1½ or 2-inch Spud.

Each..... 15.00



Plate 8292

Vitreous China Reverse Trap
Syphon Action Closet

Furnished with 1¼ or 2-inch Spud.

Each..... 11.00



Plate 8293

Vitreous China Reverse Trap Syphon Action
Closet with Raised Front Lip

Furnished with 1¼ or 2-inch Spud.

Each..... 12.00



Plate 8294

Vitreous China Giant Extra Heavy
Washdown Closet

Furnished with 1¼, 1½ or 2-inch Top or Back Spud.

Each..... 15.00



Plate 8295

Vitreous China Giant Extra Heavy Washdown
Closet with Integral China Seat

Furnished with 1¼, 1½ or 2-inch Top or Back Spud.

Each..... 17.00

Vitreous China Closets

Plate 8300

Vitreous China Syphon Action Hopper and Trap Closet

Note: These Closets are made with a number of variations as shown below to allow for difference in roughing requirements, and care should be taken when ordering to specify exactly what is wanted.

- No. 1 Center of Outlet to end of Spud.....6½ inches
 No. 2 Center of Outlet to end of Spud.....8¼ inches
 No. 3 Center of Outlet to end of Spud.....5¾ inches
 No. 4 Center of Outlet to end of Spud.....11½ inches
 No. 5 Center of Outlet to end of Spud.....9¾ inches

Furnished with 1¼ or 2-inch Spud.

Each..... 9.50



Plate 8300



Plate 8301

Vitreous China Close Roughing Syphon Action Hopper and Trap Closet with Outlet at back of Foot

Center of Outlet to end of Spud, 4¼ inches.
 Furnished with 1¼ or 2-inch Spud.

Each..... 11.00



Plate 8302

Vitreous China Close Roughing Syphon Action Hopper and Trap Closet with Outlet in Extended Foot

Center of Outlet to end of Spud, 2¼ inches.
 Furnished with 1¼ or 2-inch Spud.

Each..... 13.00



Plate 8303

Vitreous China Juvenile Syphon Action Hopper and Trap Closet

Made 13 inches high.
 Furnished with 1¼ or 2-inch Spud.

Each..... 9.50



Plate 8304

Vitreous China No. 3 Plain Oval Front Outlet Washout Closet

Furnished with 1¼-inch Spud.

Each..... 9.00

Vitreous China Hoppers

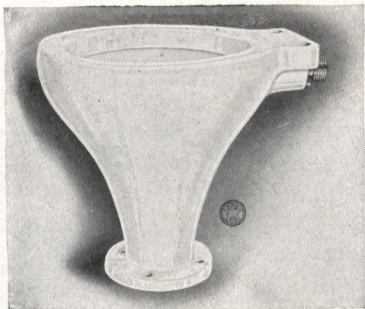


Plate 8310

Vitreous China Tall Round Flushing Rim Hopper with Seat Attachment

Furnished with 1 1/4-inch Spud.

Each..... 6.00

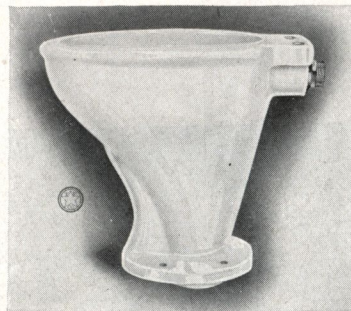


Plate 8311

Vitreous China Tall Oval Flushing Rim Hopper with Single Bracket and Seat Attachment

Furnished with 1 1/4-inch Spud.

Each..... 7.00

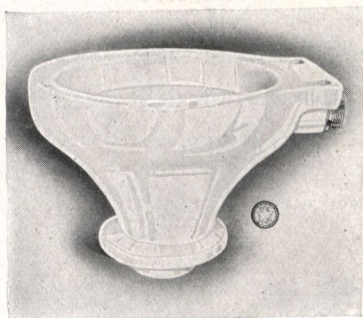


Plate 8312

Vitreous China Short Round Flushing Rim Hopper with Seat Attachment

Furnished with 1 1/4-inch Spud.

Each..... 3.00

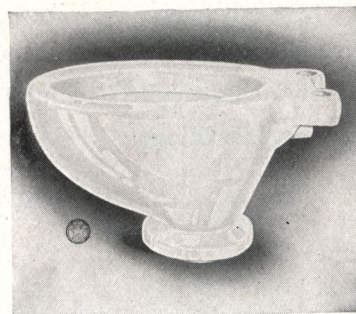


Plate 8313

Vitreous China Short Oval Flushing Rim Hopper with Seat Attachment

Furnished with 1 1/4-inch Spud.

Each..... 4.00

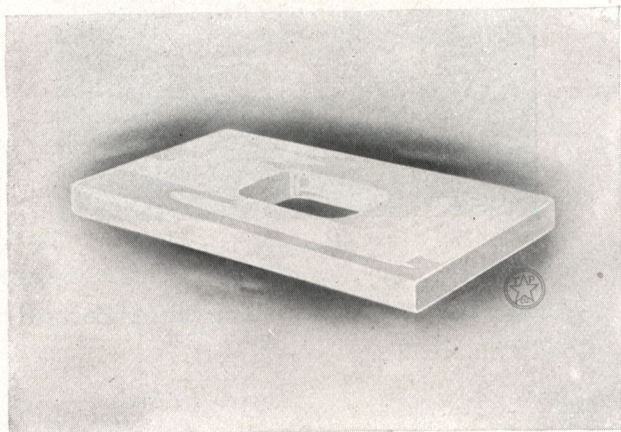


Plate 8314

Plate 8314

Vitreous Porcelain Floor Slab for Closets and Slop Sinks

No.....	1	2
Length, inches.....	21	27
Width, inches.....	12	12
Hole, inches.....	7 x 5	7 x 5
Each.....	5.00	5.75

No. 1 For Syphon Action Closets.

No. 2 For Syphon Jet Closets.

Nason Closet Seats

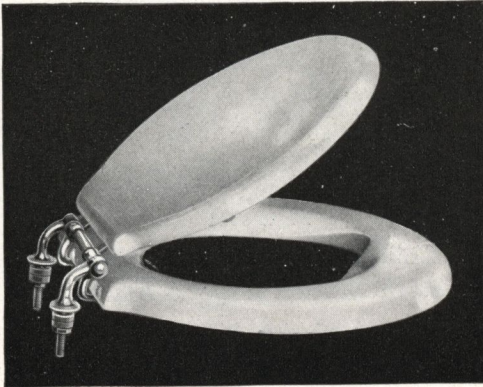


Plate 8320

Nason No. 800 Cellu-White Sheet Covered Seat and Cover with Straight Back and Nickel-plated Cast Brass Bar Hinge.

Each..... 9.00

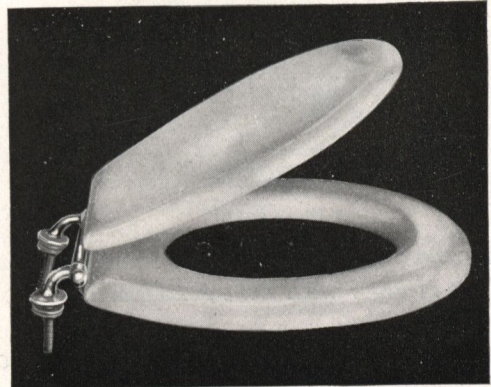


Plate 8321

Nason No. 700 Cellu-White Sprayed Covered Seat and Cover with Straight Back and Nickel-plated Cast Brass Hinge.

Each..... 8.00

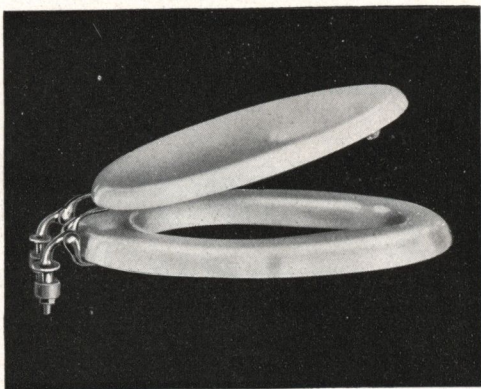


Plate 8322

Nason No. 900 Cellu-White Sheet Covered Seat and Cover with Round Back and Nickel-plated Cast Brass Post Hinges.

Each..... 8.00

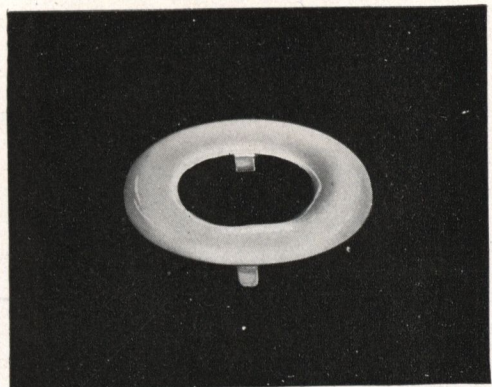


Plate 8323

Nason No. 200 Cellu-White Sheet Covered Child's Slip-on Seat.

Each..... 5.00

This Child's Seat will fit any regular closet seat.

Nason Closet Seats

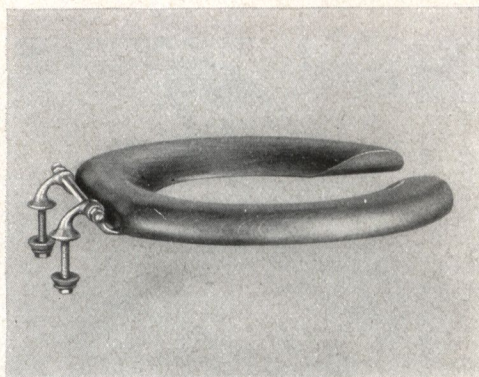


Plate 8330

Nason No. 170 Quarter Sawed Guaranteed Non-split Open Front Seat, Cabinet Finish with Nickel-plated Cast Brass Bar Hinge and Crescent Reinforcing Plate. For Raised Lip and Regular Closets.

Cellu-White Sheet Covered.....	10.00
Natural Oak Finish.....	6.00
Birch Mahogany Finish.....	7.00

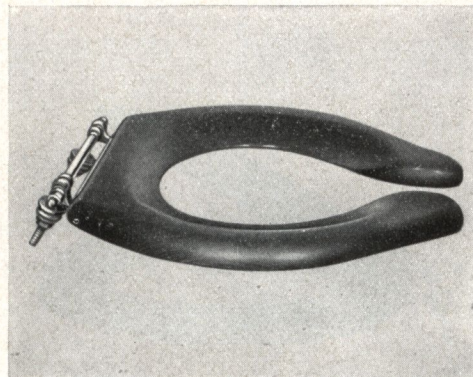


Plate 8331

Nason No. 171 Quarter Sawed Guaranteed Non-split Extended Lip Open Front Seat, Cabinet Finish with Nickel-plated Cast Brass Bar Hinge and Crescent Reinforcing Plate. For Extended Lip Closets.

Cellu-White Sheet Covered.....	11.00
Natural Oak Finish.....	7.00
Birch Mahogany Finish.....	8.00

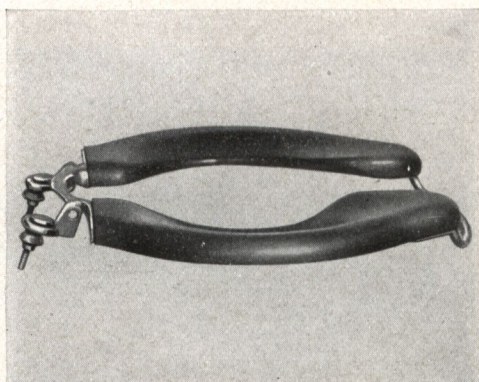


Plate 8332

Nason Hartford Open Front and Back Seat without Cover, Cabinet Finish with Nickel-plated Cast Brass Special Bar Hinge and Front Reinforcing Bar. For Extended Lip Closets.

Cellu-White Sheet Covered.....	12.00
Natural Oak Finish.....	8.00
Birch Mahogany Finish.....	9.00



Plate 8333

Nason Baby Horseshoe Comfort Slip-on Seat, Varnish Finish

Natural Oak Finish.....	1.50
Golden Oak Finish.....	1.50
Birch Mahogany Finish.....	1.75

This Baby Comfort Seat will fit any regular closet seat.

Nason Closet Seats

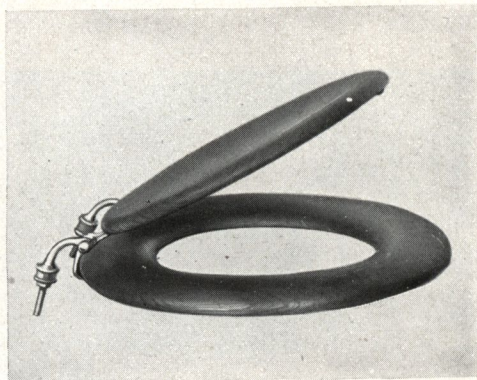


Plate 8340

Nason No. 600 Guaranteed Non-split Seat and Cover, Cabinet Finish with Nickel-plated Cast Brass Post Hinges.

Natural Oak Finish.....	4.00
Golden Oak Finish.....	4.00
Birch Mahogany Finish.....	4.50



Plate 8341

Nason No. 700 Guaranteed Non-split Saddle Seat and Cover, Cabinet Finish with Nickel-plated Cast Brass Bar Hinge.

Natural Oak Finish.....	4.00
Golden Oak Finish.....	4.00
Birch Mahogany Finish.....	4.50
If without Cover, deduct.....	.50

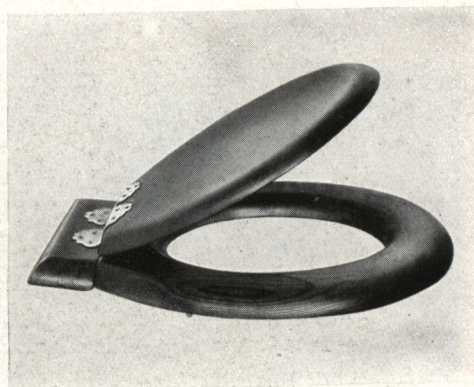


Plate 8342

Nason No. 55 Varnish Finish Seat and Cover with Wood Back Strip, Nickel-plated Stamped Hinges and Bolts.

Natural Oak Finish.....	2.50
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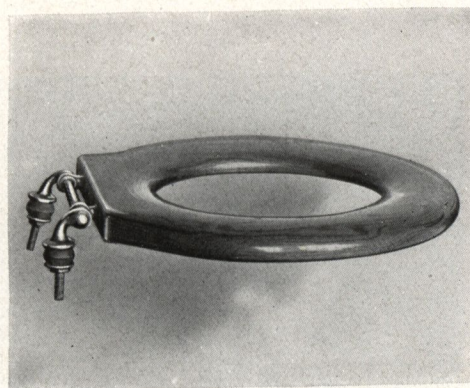


Plate 8343

Nason No. 800 Guaranteed Non-split Seat, Cabinet Finish without Cover, with Nickel-plated Cast Brass Bar Hinge.

Natural Oak Finish.....	5.50
Golden Oak Finish.....	5.50
Birch Mahogany Finish.....	6.00
If with Cover, add.....	.50

Nason Closet Seats

Self-raising



Plate 8350

Plate 8350

Nason No. 166 Guaranteed Non-split Self-raising Seat with Nickel-plated Cast Brass Bar Hinge, and Adjustable Bronzed Iron Counterbalance Ball Weights.

Natural Oak Finish.....	7.00
Golden Oak Finish.....	7.00
Birch Mahogany Finish.....	7.50

Plate 8351

Nason No. 250 Cabinet Finish Oak Self-raising Seat without Cover, with Nickel-plated Brass Spring Hinges with Automatic Check.

Natural Oak Finish.....	6.00
Golden Oak Finish.....	6.00
Birch Mahogany Finish.....	6.50

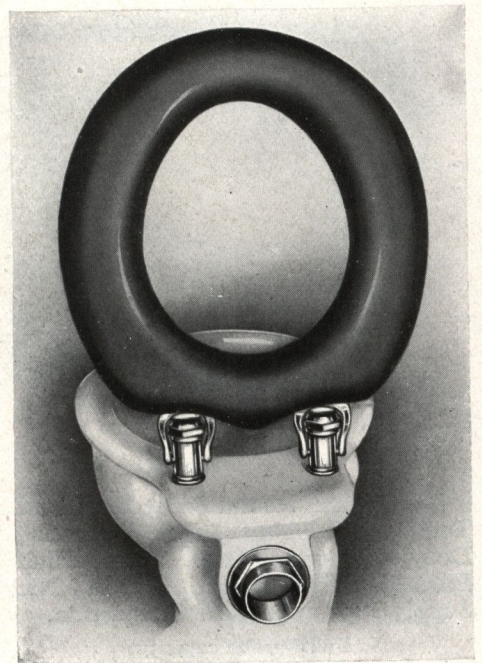


Plate 8351

Vitreous China Low Tanks

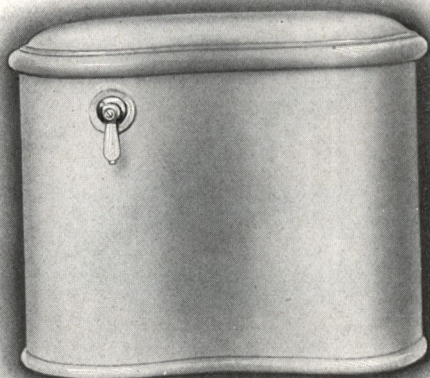


Plate 8360

Namanco Vitreous China Low Tank, with China Lever Operating Handle, Monarch Gravity Flush Valve, Monarch High Pressure Elevated Ball Cock, $\frac{3}{8}$ -inch Nickel-plated Iron Pipe Size Supply Pipe and Nickel-plated Flush Connection.

Full 8-gallon capacity.
Dimensions: $22\frac{1}{2} \times 18$ inches.

Each..... 20.00

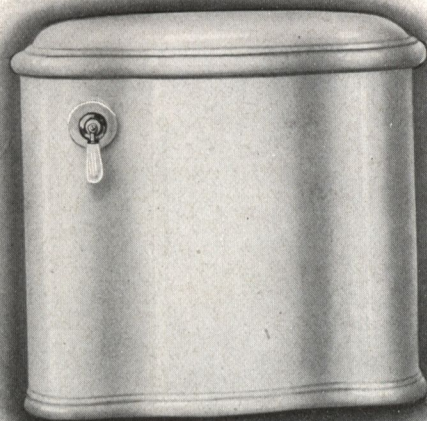


Plate 8361

Melrose Vitreous China Low Tank, with China Lever Operating Handle, Monarch Gravity Flush Valve, Monarch High Pressure Elevated Ball Cock, $\frac{3}{8}$ -inch Nickel-plated Iron Pipe Size Supply Pipe and Nickel-plated Flush Connection.

Full 8-gallon capacity.
Dimensions: $21\frac{1}{2} \times 18$ inches.

Each..... 20.00

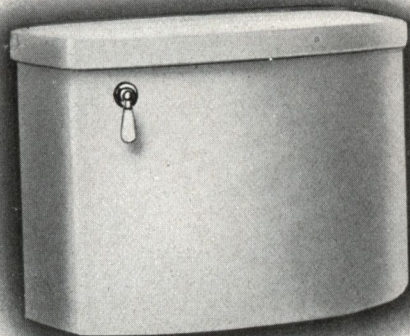


Plate 8362

No. 2 B. M. Round Front Vitreous China Low Tank with China Lever Operating Handle, Douglas Pattern Flush Valve, High Pressure Elevated Ball Cock, $\frac{3}{8}$ -inch Nickel-plated Supply Pipe and Flush Connection.

Full 8-gallon capacity.
Dimensions: $23\frac{1}{2} \times 16\frac{1}{2}$ inches.

Each..... 18.00

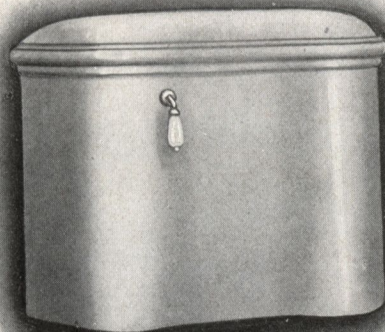


Plate 8363

Davis Vitreous China Low Tank, with China Lever Operating Handle, Douglas Pattern Flush Valve, High Pressure Elevated Ball Cock, $\frac{3}{8}$ -inch Nickel-plated Supply Pipe and Flush Connection.

Full 8-gallon capacity.
Dimensions: $22\frac{1}{2} \times 17$ inches.

Each..... 18.00

Vitreous China Swell Front High Tanks for Closets and Urinals

Plate 8370

Three-Gallon Tank

Dimensions: Length over all, 16 inches; width over all, 8 inches; depth inside, 12 inches.

Price, Tank only 10.00

Four-Gallon Tank

Dimensions: Length over all, 17½ inches; width over all, 9 inches; depth inside, 12 inches.

Price, Tank only 11.00

Five-Gallon Tank

Dimensions: Length over all, 19 inches; width over all, 10 inches; depth inside, 12 inches.

Price, Tank only 11.50

Six-Gallon Tank

Dimensions: Length over all, 20½ inches; width over all, 10½ inches; depth inside, 12 inches.

Price, Tank only 11.50

Eight-Gallon Tank

Dimensions: Length over all, 23 inches; width over all, 11½ inches; depth inside, 12 inches.

Price, Tank only 15.50

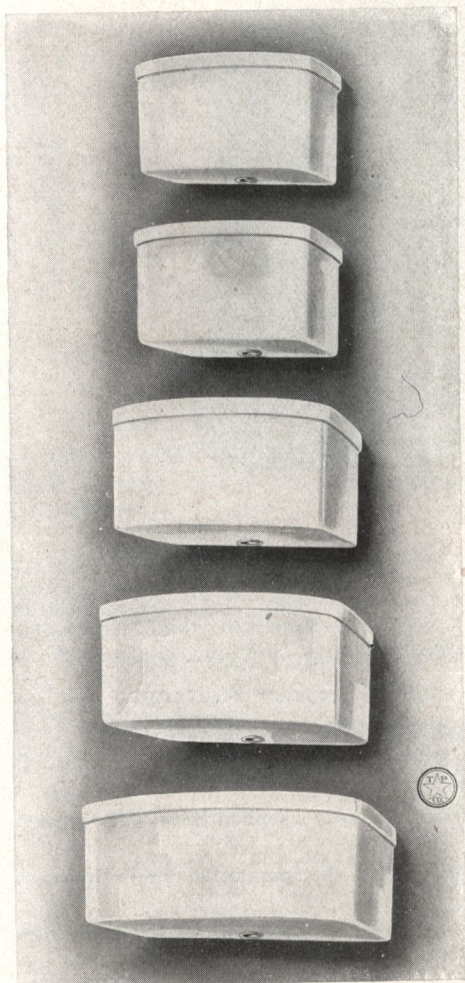


Plate 8370

Fittings

Fittings for above High Tanks can be furnished in a variety of styles, the most popular of which are as follows:

No. 1	Top Supply, Pull Handle Tank Fittings, complete.....	8.30
No. 2	Bottom Supply, Pull Handle Tank Fittings, complete.....	8.30
No. 3	Automatic Tank Fittings, complete.....	8.30

These prices do not include Flush or Supply Pipes.

Note

All Vitreous China High Tanks are furnished with Spud having 1½-inch Iron Pipe Size Thread, with Nickel-plated Brass Coupling Nut, reamed 1½ inches. However, any smaller size Flush Pipe can be used provided collar on same is 1¾-inch outside diameter.

Automatic Fittings only furnished on Three and Four-Gallon Tanks.

Nason Monarch Cistern

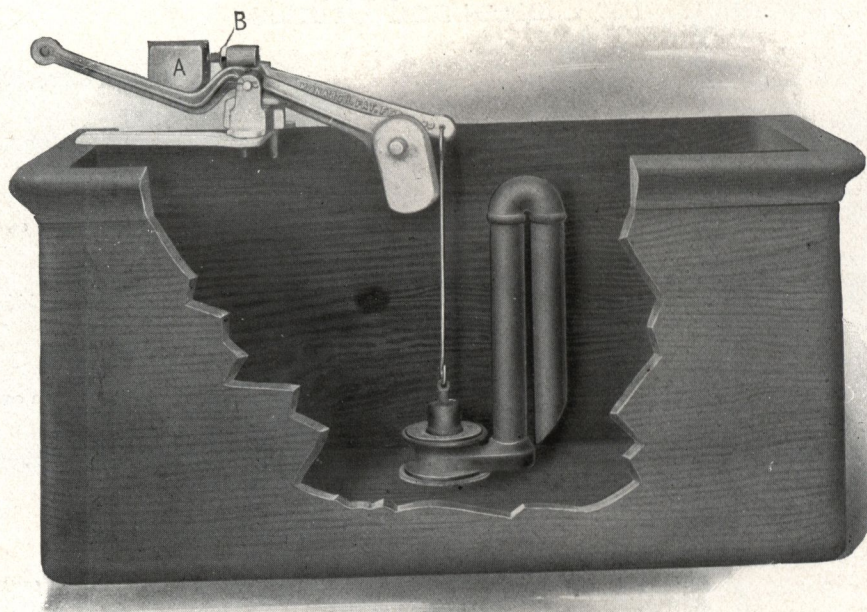


Plate 8380

Nason No. 9 Monarch 8-gallon Hardwood Cistern, lined with full weight 10-ounce Copper, with Monarch Gravity Flushing Valve and Special Lever, fitted with High Pressure Top Supply Ball Cock with Copper Ball and Operating Rod. Nickel-plated Knee Brackets, Chain and Pull, complete. 14.00

Note that this Valve operates on the gravity, or slow-closing principle, and that it is not a syphon valve. The syphon tube shown is simply to insure ample re-fill.

The closing of the Valve is regulated by Weight A, the adjusting of which enables the operator to obtain the exact flush required.

By moving Weight A to the right, a more rapid closing of the Valve is effected, and by moving it to the left, a slower operation follows. When the weight is properly adjusted, secure it in position with Locknut B.

The Ball Cock and Ball specified above are not shown in the illustration. We can furnish the Monarch Gravity Flush Valve with any size cistern that may be ordered, at a slight additional charge.

Plate 8381

Above Tank Lined Only

No. 9 Hardwood Hand Polished, Moulded Top High Tank with Nickel-plated Knee Brackets, and lined with 10-ounce Copper and bored for Flush Valve 3 inches from center to back.	
No Fittings.	8.00
6-gallon Natural Oak Finish Tank, Lined only 10-ounce Copper.	5.60
6-gallon Golden Oak Finish Tank, Lined only 10-ounce Copper.	5.60
6-gallon Birch Mahogany Finish Tank, Lined only 10-ounce Copper.	6.00
8-gallon Natural Oak Finish Tank, Lined only 10-ounce Copper.	7.50
8-gallon Golden Oak Finish Tank, Lined only 10-ounce Copper.	7.50
8-gallon Birch Mahogany Finish Tank, Lined only 10-ounce Copper.	8.00
8-gallon Cellu-White Finish Tank, Lined only 12-ounce Copper.	16.00

Wood Tanks

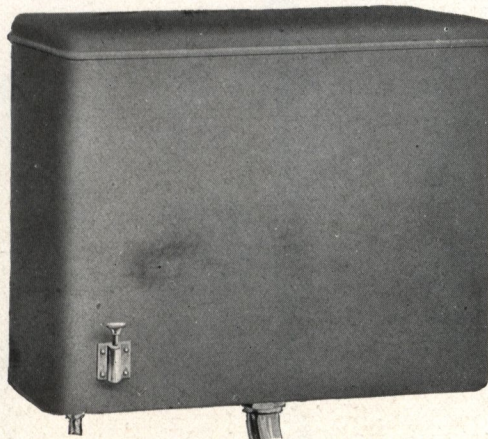


Plate 8390. Oak Low Tank

Plate 8390

Hand Polished Oak Low Tank, with Nickel-plated Push Button, 10-ounce Tinned Copper Lining, High Pressure Ball Cock, Douglas Type Flush Valve, $\frac{3}{8}$ -inch Iron Pipe Size Supply Pipe and Flush Connection.

Full Eight-Gallon Capacity

Natural Oak Finish, complete as described.....	13.50
Golden Oak Finish, complete as described.....	13.50
Birch Mahogany Finish, complete as described.....	14.00
Cellu-White Finish, complete as described.....	25.00

Note: These Tanks can be furnished with any weight Copper Lining or any style fittings desired. Prices on application.

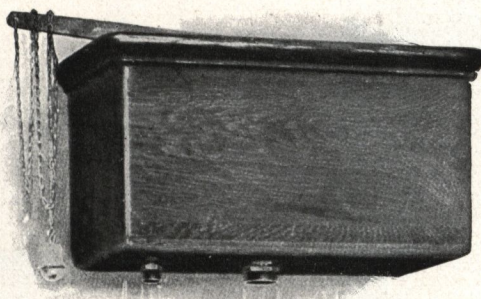


Plate 8391. Oak High Tank

Plate 8391A

Natural or Golden Oak High Tank with Loose Back, lined 8-ounce Copper, All Brass Cone Syphon Valve, Hartford Ball Cock, Solderless Copper Float, Lever, Chain and Pull Complete.

6-gallon, Plain Top, Top Supply.....	7.50
6-gallon, Plain Top, Bottom Supply.....	7.70
6-gallon, Moulded Top, Top Supply.....	7.75
6-gallon, Moulded Top, Bottom Supply.....	7.95
8-gallon, Plain Top, Top Supply.....	8.15
8-gallon, Plain Top, Bottom Supply.....	8.25
8-gallon, Moulded Top, Top Supply.....	8.50
8-gallon, Moulded Top, Bottom Supply.....	8.70
6-gallon Plain Pine High Tank, complete.....	6.15
8-gallon Plain Pine High Tank, complete.....	6.50

Plate 8391B

Natural or Golden Oak Hand Polished High Tank, with Nickel-plated Knee Brackets, lined 10-ounce Copper, Nason All Brass Cone Syphon Valve, Ryan High Pressure Ball Cock, Solderless Copper Float and Rod, Heavy Lever, Nickel-plated Chain and Oak Pull.

6-gallon, Moulded Top, Top Supply.....	12.00
6-gallon, Moulded Top, Bottom Supply.....	12.25
8-gallon, Moulded Top, Top Supply.....	14.50
8-gallon, Moulded Top, Bottom Supply.....	14.75
For Birch Mahogany Finish, add.....	1.00

Enameled Iron Tanks



Plate 8400

Porcelain Enameled Iron Round Front and Flat Top Low Tank, with China Lever Operating Handle and Fittings Complete.

Dimensions

22 inches wide, 18 $\frac{1}{4}$ inches high, 8 inches deep.

Each 19.00



Plate 8401

Porcelain Enameled Iron Round Front and Flat Top Low Tank, with China Lever Operating Handle and Fittings Complete.

Dimensions

21 inches wide, 17 inches high, 8 inches deep.

Each 16.00

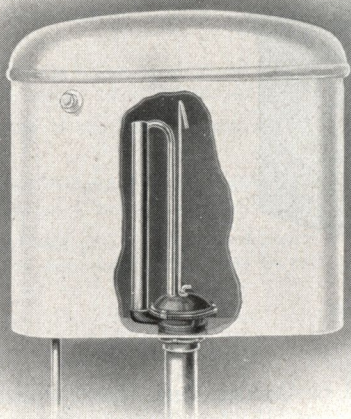


Plate 8402

Porcelain Enameled Armco Iron Round Front Low Tank, with Push Button Operation, High Pressure Ball Cock, and Hydraulic Flush Valve.

Capacity, 8 gallons.

Each : 12.50

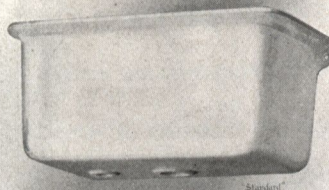


Plate 8403

Porcelain Enameled Iron High Tank

No.....	1	2
Sizes.....	20x10x10	24x13x14
Enameled all over, without Fittings.	10.00	17.00
Enameled inside, without Fittings..	8.00	15.00
Enameled all over with Perfection Fittings.....	17.00	.....
Enameled inside, with Perfection Fittings.....	15.00	.....

Closet Tank Pulls

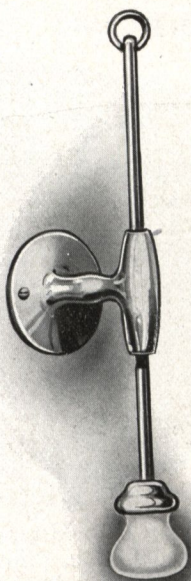


Plate 8410
Nickel-plated Guide
Rod with China
Pull
Each..... 2.00

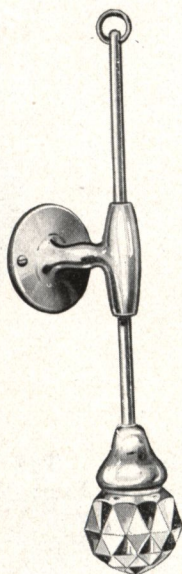


Plate 8411
Nickel-plated Guide
Rod with Cut Glass
Pull.
Each..... 3.50

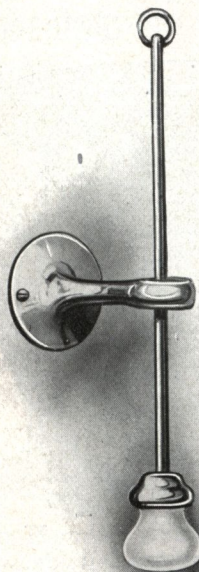


Plate 8412
Nickel-plated No. 10
Guide Rod with China
Pull.
Each..... 2.00



Plate 8413
Hardwood Pull
with Rubber Ring
Each..... .20

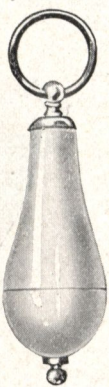


Plate 8414
Celluloid Pear
Shape Pull
Each..... .60

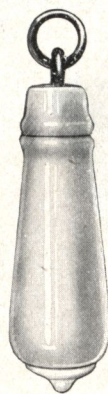


Plate 8415
Celluloid Long
Pattern Pull
Each..... .50



Plate 8416
Bone China Long
Pattern Pull
Each..... 1.00



Plate 8419

Plate 8417

Plate 8417
Celluloid Ball Pull
Each..... .40

Plate 8418

Plate 8419

Nickel-plated Links 12 inches long (5 to a Set)
Per Set..... 1.00

Plate 8419A

Nickel-plated Double Link Pull with Solid
Brass Ring

Each..... 1.50

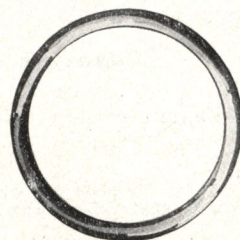


Plate 8418



Plate 8419A

Tall Round Flushing Rim Hoppers



Plate 8420

Tall Round Flushing Rim Hopper, White Enameled Inside, Painted Outside, with $1\frac{1}{4}$ -inch Brass Spud and Coupling for Lead Pipe.

Dimensions

Height, total.....	16 inches
Height, Flange to Top.....	$14\frac{3}{4}$ inches
Diameter, Top.....	$13\frac{3}{4}$ inches
Diameter, Flange.....	$7\frac{1}{2}$ inches
Diameter, Outlet.....	$3\frac{1}{2}$ inches
Center of Outlet to back of Coupling.....	$10\frac{1}{8}$ inches
Weight.....	26 pounds
Each.....	5.00



Plate 8421

Tall Round Flushing Rim Hopper, with Seat Lugs, White Enameled Inside, Painted Outside, with $1\frac{1}{4}$ -inch Brass Spud and Coupling for Lead Pipe.

Dimensions

Height, total.....	16 inches
Height, Flange to Top.....	$14\frac{3}{4}$ inches
Diameter, Top.....	$13\frac{3}{4}$ inches
Diameter, Flange.....	$7\frac{1}{2}$ inches
Diameter, Outlet.....	$3\frac{1}{2}$ inches
Center of Outlet to back of Coupling.....	$10\frac{1}{8}$ inches
Seat Lugs, center to center.....	$5\frac{1}{2}$ inches
Weight.....	26 pounds
Each.....	5.60



Plate 8422

Tall Round Flushing Rim Hopper with Wood Rim Seat, White Enameled Inside, Painted Outside, with $1\frac{1}{4}$ -inch Brass Spud and Coupling for Lead Pipe.

Dimensions

Height, total.....	17 inches
Height, Flange to Top.....	$15\frac{3}{4}$ inches
Diameter, Top.....	$15\frac{1}{4}$ inches
Diameter, Flange.....	$7\frac{1}{2}$ inches
Diameter, Outlet.....	$3\frac{1}{2}$ inches
Center of Outlet to back of Coupling.....	$10\frac{1}{8}$ inches
Weight.....	29 pounds
Each.....	6.40

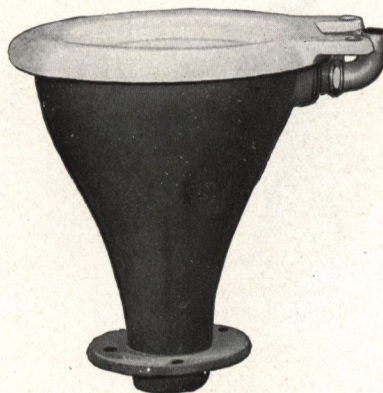


Plate 8423

Tall Round Roll Flushing Rim Hopper with Seat Lugs, White Enameled Inside and on Roll Rim, Painted Outside, with $1\frac{1}{4}$ -inch Brass Spud and Coupling for Lead Pipe.

Dimensions

Height, total.....	$16\frac{3}{4}$ inches
Height, Flange to Top.....	$15\frac{1}{8}$ inches
Diameter of Top, outside.....	15 inches
Diameter of Top, inside.....	$9\frac{1}{2}$ inches
Diameter of Flange.....	$7\frac{1}{2}$ inches
Diameter, Outlet.....	$3\frac{1}{2}$ inches
Center of Outlet to back of Coupling.....	$10\frac{1}{4}$ inches
Weight.....	37 pounds
Each.....	6.60

Tall Round and Oval Flushing Rim Hoppers

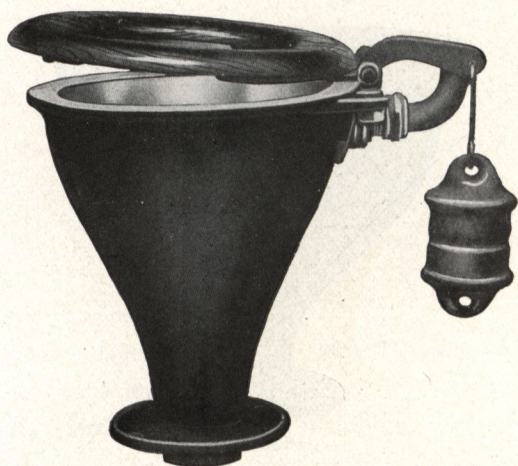


Plate 8430

Tall Round Flushing Rim Hopper with Self-raising Seat, White Enamelled Inside, Painted Outside, with 1 1/4-inch Brass Spud and Coupling for Lead Pipe.

Dimensions

Height.....	17 1/2 inches
Height, Flange to Top.....	16 1/8 inches
Diameter, Top.....	15 1/4 inches
Diameter, Flange.....	7 1/2 inches
Diameter, Outlet.....	3 1/2 inches
Center of Outlet to back of Weight.....	10 1/8 inches
Weight, total.....	43 pounds
Each.....	9.00



Plate 8431

Tall Round Flushing Rim Hopper, with Self-raising Seat and Valve, White Enamelled Inside, Painted Outside, Brass Single or Double Acting Valve.

Dimensions

Height, total.....	17 inches
Height, Hopper only.....	15 3/4 inches
Diameter, Top.....	15 1/4 inches
Diameter, Flange.....	7 1/2 inches
Diameter, Outlet.....	3 1/2 inches
Center of Outlet to back of Weight.....	13 inches
Weight, total.....	43 pounds
Each.....	12.00



Plate 8432

Tall Oval Flushing Rim Hopper, White Enamelled Inside, Painted Outside, with 1 1/4-inch Brass Spud and Coupling for Lead Pipe.

Dimensions

Height, total.....	16 7/8 inches
Height, Flange to Top.....	15 5/8 inches
Diameter, Top.....	15 1/2 x 14 1/4 inches
Diameter, Flange.....	8 inches
Diameter, Outlet.....	3 3/4 inches
Center of Outlet to back of Spud.....	8 3/8 inches
Weight.....	34 pounds
Each.....	5.50



Plate 8433

Tall Oval Flushing Rim Hopper, with Seat Lugs, White Enamelled Inside, Painted Outside, with 1 1/4-inch Brass Spud and Coupling for Lead Pipe.

Dimensions

Height, total.....	17 inches
Height, Flange to Top.....	15 3/4 inches
Diameter, Top.....	15 1/2 x 14 1/4 inches
Diameter, Flange.....	8 inches
Diameter, Outlet.....	3 1/2 inches
Center of Outlet to back of Coupling.....	8 3/8 inches
Seat Lugs, center to center.....	5 1/2 inches
Weight.....	36 pounds
Each.....	6.10

Tall Oval Flushing Rim Hoppers



Plate 8440

Tall Oval Flushing Rim Hopper, with Wood Rim Seat, White Enamelled Inside, Painted Outside, with 1 $\frac{1}{4}$ -inch Brass Spud and Coupling for Lead Pipe.

Dimensions

Height, total.....	18 inches
Height, Flange to Top.....	16 $\frac{5}{8}$ inches
Diameter, Top.....	17 $\frac{7}{8}$ x 14 $\frac{5}{8}$ inches
Diameter, Flange.....	8 inches
Diameter, Outlet.....	3 $\frac{3}{4}$ inches
Center Outlet to back of Spud.....	8 $\frac{3}{8}$ inches
Weight.....	37 pounds
Each.....	6.90



Plate 8441

Tall Oval Roll Flushing Rim Hopper, with Seat Lugs, White Enamelled Inside and on Roll Rim, Painted Outside, with 1 $\frac{1}{4}$ -inch Brass Spud and Coupling for Lead Pipe.

Dimensions

Height, total.....	17 $\frac{1}{2}$ inches
Height, Flange to Top.....	16 inches
Diameter, Top.....	16 $\frac{3}{4}$ x 15 inches
Diameter, Flange.....	8 $\frac{1}{2}$ inches
Diameter, Outlet.....	3 $\frac{1}{2}$ inches
Center of Outlet to back of Spud.....	8 $\frac{1}{2}$ inches
Seat Lugs, center to center.....	5 $\frac{1}{2}$ inches
Weight.....	46 pounds
Each.....	7.10

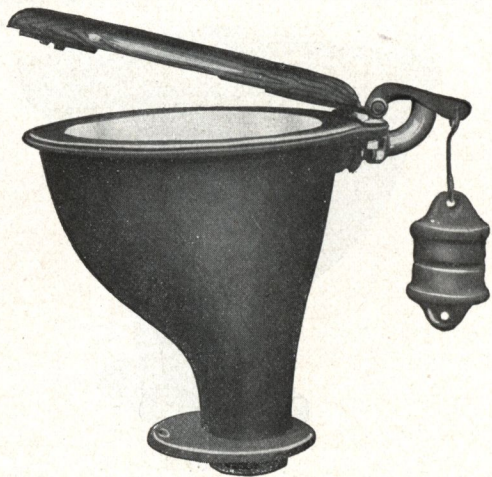


Plate 8442

Tall Oval Flushing Rim Hopper, with Self-raising Seat, White Enamelled Inside, Painted Outside, with 1 $\frac{1}{4}$ -inch Brass Spud and Coupling for Lead Pipe.

Dimensions

Height.....	18 $\frac{1}{8}$ inches
Height, Flange to Top.....	17 inches
Diameter, Top.....	17 x 14 $\frac{1}{2}$ inches
Diameter, Flange.....	8 inches
Diameter, Outlet.....	3 $\frac{3}{4}$ inches
Center Outlet to back of Weight.....	11 $\frac{1}{2}$ inches
Weight, total.....	55 pounds
Each.....	9.00



Plate 8443

Tall Oval Roll Flushing Rim Hopper, with Self-raising Seat, White Enamelled Inside and on Roll Rim, Painted Outside, with 1 $\frac{1}{4}$ Brass Spud and Coupling.

Dimensions

Height.....	19 $\frac{1}{4}$ inches
Height, Flange to Top.....	17 $\frac{7}{8}$ inches
Diameter, Top.....	17 $\frac{1}{2}$ x 16 $\frac{1}{4}$ inches
Diameter of Flange.....	8 inches
Diameter, Outlet.....	3 $\frac{3}{4}$ inches
Center Outlet to back of Weight.....	11 $\frac{1}{2}$ inches
Weight, total.....	64 pounds
Each.....	10.00

Short Round Flushing Rim Hoppers



Plate 8450

Short Round Flushing Rim Hopper, White Enameled Inside, Painted Outside, with $1\frac{1}{4}$ -inch Brass Spud and Coupling for Lead Pipe.

Dimensions

Height, total.....	10½ inches
Height, Flange to Top.....	9¾ inches
Diameter, Top.....	13¾ inches
Diameter, Flange.....	7 inches
Diameter, Outlet.....	3⅝ inches
Center of Outlet to back of Coupling.....	9⅛ inches
Weight.....	23½ pounds
Each.....	5.00

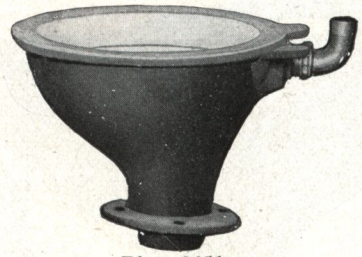


Plate 8451

Short Round Flushing Rim Hopper, with Seat Lugs, White Enameled Inside, Painted Outside, with $1\frac{1}{4}$ -inch Brass Spud and Coupling for Lead Pipe.

Dimensions

Height, total.....	10½ inches
Height, Flange to Top.....	9¾ inches
Diameter, Top.....	13¾ inches
Diameter, Flange.....	7 inches
Diameter, Outlet.....	3⅝ inches
Center of Outlet to back of Coupling.....	9⅛ inches
Seat Lugs, center to center.....	5½ inches
Weight.....	24½ pounds
Each.....	5.60

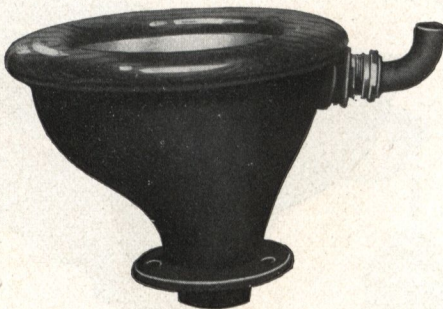


Plate 8452

Short Round Flushing Rim Hopper, with Wood Rim Seat, White Enameled Inside, Painted Outside, with $1\frac{1}{4}$ -inch Brass Spud and Coupling for Lead Pipe.

Dimensions

Height, total.....	12 inches
Height, Flange to Top.....	11 inches
Diameter, Top.....	15¼ inches
Diameter, Flange.....	7 inches
Diameter, Outlet.....	3⅝ inches
Center of Outlet to back of Coupling.....	9⅛ inches
Weight.....	24 pounds
Each.....	6.40



Plate 8453

Short Round Roll Flushing Rim Hopper, with Seat Lugs, White Enameled Inside and on Roll Rim, Painted Outside, with $1\frac{1}{4}$ -inch Brass Spud.

Dimensions

Height, total.....	11½ inches
Height, Flange to Top.....	10½ inches
Diameter, Top.....	14¾ inches
Diameter, Flange.....	7 inches
Diameter, Outlet.....	3¼ inches
Center of Outlet to back of Coupling.....	9 inches
Seat Lugs, center to center.....	5½ inches
Weight.....	34 pounds
Each.....	6.60

Short Round and Oval Flushing Rim Hoppers



Plate 8460

Short Round Flushing Rim Hopper, with Self-raising Seat, White Enameled Inside, Painted Outside, with $1\frac{1}{4}$ -inch Brass Spud and Coupling for Lead Pipe.

Dimensions

Height.....	12 $\frac{1}{4}$ inches
Height, Flange to Top.....	11 $\frac{1}{2}$ inches
Diameter, Top.....	15 inches
Diameter, Flange.....	7 inches
Diameter, Outlet.....	3 $\frac{5}{16}$ inches
Center of Outlet to back of Weight.....	14 $\frac{5}{8}$ inches
Weight, total.....	42 pounds
Each.....	9.00



Plate 8461

Short Round Flushing Rim Hopper, with Self-raising Seat and Valve, White Enameled Inside, Painted Outside, with Brass Single or Double Acting Valve.

Dimensions

Height.....	12 $\frac{1}{4}$ inches
Height, Flange to Top.....	11 $\frac{1}{2}$ inches
Diameter, Top.....	15 inches
Diameter, Flange.....	7 inches
Diameter, Outlet.....	3 $\frac{5}{16}$ inches
Center of Outlet to back of Weight.....	14 $\frac{5}{8}$ inches
Weight, total.....	47 pounds
Each.....	12.00



Plate 8462

Short Oval Flushing Rim Hopper, White Enameled Inside, Painted Outside, with $1\frac{1}{4}$ -inch Brass Spud and Coupling for Lead Pipe.

Dimensions

Height, total.....	11 $\frac{7}{16}$ inches
Height, Flange to Top.....	10 $\frac{3}{8}$ inches
Diameter, Top.....	15 $\frac{1}{2}$ x 14 $\frac{3}{8}$ inches
Diameter, Flange.....	7 inches
Diameter, Outlet.....	3 $\frac{7}{8}$ inches
Center of Outlet to back of Coupling.....	8 $\frac{1}{2}$ inches
Weight.....	29 pounds
Each.....	5.00



Plate 8463

Short Oval Flushing Rim Hopper, with Seat Lugs, White Enameled Inside, Painted Outside, with $1\frac{1}{4}$ -inch Brass Spud and Coupling for Lead Pipe.

Dimensions

Height, total.....	11 $\frac{7}{16}$ inches
Height, Flange to Top.....	10 $\frac{3}{8}$ inches
Diameter, Top.....	15 $\frac{1}{2}$ x 14 $\frac{3}{8}$ inches
Diameter, Flange.....	7 inches
Diameter, Outlet.....	3 $\frac{7}{8}$ inches
Center of Outlet to back of Coupling.....	8 $\frac{1}{2}$ inches
Seat Lugs, center to center.....	5 $\frac{1}{2}$ inches
Weight.....	30 pounds
Each.....	5.60

Short Oval Flushing Rim Hoppers



Plate 8470

Short Oval Flushing Rim Hopper, with Wood Rim Seat, White Enamelled Inside, Painted Outside, with $1\frac{1}{4}$ -inch Brass Spud and Coupling for Lead Pipe.

Dimensions

Height, total.....	12 $\frac{1}{2}$ inches
Height, Flange to Top.....	11 $\frac{1}{16}$ inches
Diameter, Top.....	16 x 15 inches
Diameter, Flange.....	7 inches
Diameter, Outlet.....	3 $\frac{7}{8}$ inches
Center of Outlet to back of Coupling.....	8 $\frac{1}{2}$ inches
Weight.....	31 pounds
Each.....	6.40



Plate 8471

Short Oval Roll Flushing Rim Hopper, with Seat Lugs, White Enamelled Inside, Painted Outside with $1\frac{1}{4}$ -inch Brass Spud and Coupling for Lead Pipe.

Dimensions

Height, total.....	11 $\frac{3}{4}$ inches
Height, Flange to Top.....	10 $\frac{5}{16}$ inches
Diameter, Top.....	17 x 15 $\frac{1}{4}$ inches
Diameter, Flange.....	7 inches
Diameter, Outlet.....	3 $\frac{7}{8}$ inches
Center of Outlet to back of Coupling.....	8 $\frac{1}{2}$ inches
Seat Lugs, center to center.....	5 $\frac{1}{2}$ inches
Weight.....	38 pounds
Each.....	6.60

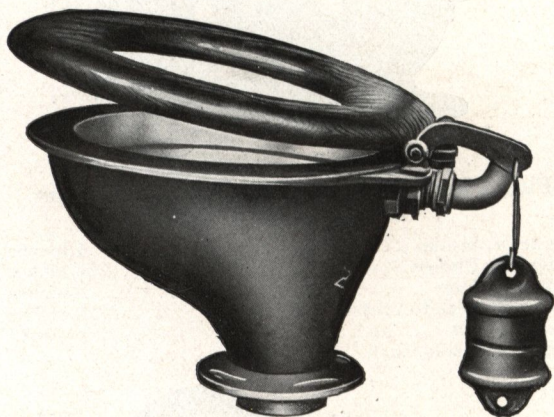


Plate 8472

Short Oval Flushing Rim Hopper, with Self-raising Seat, White Enamelled Inside, Painted Outside, with $1\frac{1}{4}$ -inch Brass Spud and Coupling for Lead Pipe.

Dimensions

Height.....	12 $\frac{3}{4}$ inches
Height, Flange to Top.....	11 $\frac{7}{8}$ inches
Diameter, Top.....	17 x 14 $\frac{1}{2}$ inches
Diameter, Flange.....	7 inches
Diameter, Outlet.....	3 $\frac{7}{8}$ inches
Center of Outlet to back of Weight.....	11 $\frac{1}{2}$ inches
Weight, total.....	45 pounds
Each.....	9.00



Plate 8473

Short Oval Flushing Rim Hopper, with Self-raising Seat and Valve, White Enamelled Inside, Painted Outside, with Brass Single or Double Acting Valve.

Dimensions

Height.....	13 inches
Height, Flange to Top.....	11 $\frac{1}{4}$ inches
Diameter, Top.....	16 $\frac{3}{8}$ x 14 $\frac{7}{8}$ inches
Diameter, Flange.....	7 inches
Diameter, Outlet.....	3 $\frac{7}{8}$ inches
Center of Outlet to back of Weight.....	11 inches
Weight, total.....	46 pounds
Each.....	12.00

Hopper Traps

Cup Flange—New York Regulation

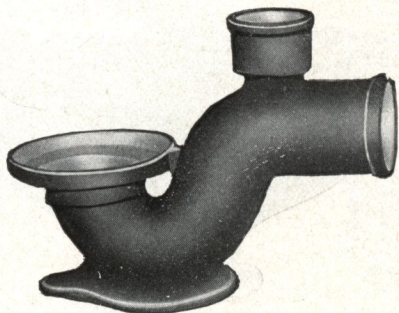


Plate 8480

**Half S Vented. For Iron
Pipe Connection**
Dimensions

Diameter, inside.....	4 inches
Diameter, Flange.....	7½ inches
Flange to floor.....	6 inches
Center of Inlet to end of Outlet.....	13½ inches
Painted, each.....	2.25
Enameled inside, each.....	2.85



Plate 8481

**Three-Quarter S Vented. For Iron
Pipe Connection**
Dimensions

Diameter, inside.....	4 inches
Diameter, Flange.....	7½ inches
Flange to floor.....	6 inches
Center of Inlet to Center of Outlet.....	15 inches
Painted, each.....	2.25
Enameled inside, each.....	2.85



Plate 8482

Full S Vented. For Iron Pipe Connection
Dimensions

Diameter, inside.....	4 inches
Diameter, Flange.....	7½ inches
Flange to floor.....	6 inches
Center of Inlet to center of Outlet.....	13 inches
Painted, each.....	2.25
Enameled inside, each.....	2.85

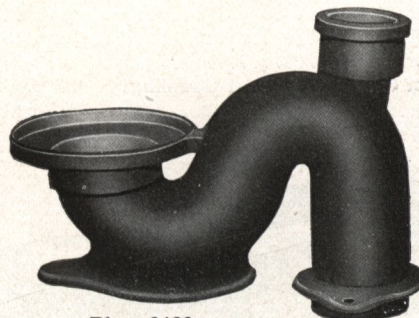


Plate 8483

Full S Vented. For Lead Pipe Connection
Dimensions

Diameter, inside.....	4 inches
Diameter, Flange.....	7½ inches
Flange to floor.....	6 inches
Center of Inlet to center of Outlet.....	13 inches
Painted, each.....	2.25
Enameled inside, each.....	2.85

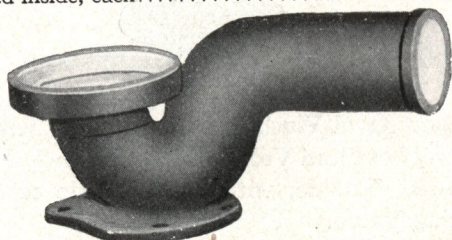


Plate 8484

**Special Half S Non-vented. For Iron
Pipe Connection**
Dimensions

Diameter, inside.....	4 inches
Diameter, Flange.....	7¾ inches
Flange to floor.....	5¾ inches
Center of Inlet to center of Outlet.....	16½ inches
Enameled inside, each.....	4.00



Plate 8485

**Special Full S Non-vented. For Iron
Pipe Connection**
Dimensions

Diameter, inside.....	4 inches
Diameter, Flange.....	8¾ inches
Flange to floor.....	5½ inches
Center of Inlet to center of Outlet.....	11 inches
Enameled inside, each.....	4.00

Hopper and Tank Combinations

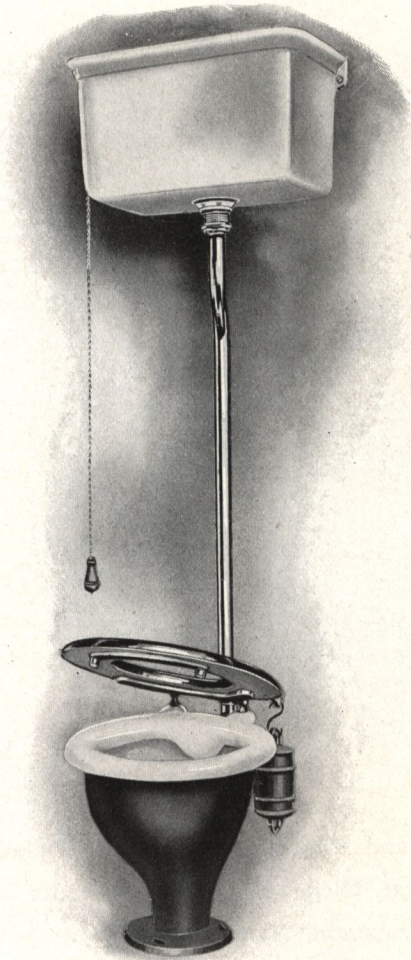


Plate 8490

Plate 8490

Tall Oval Roll Flushing Rim Hopper, Enameled Inside and on Roll Rim, with Self-raising Seat, Enameled All Over Tank, 1¼-inch Nickel-plated Flush Pipe.

Complete as described..... 20.00

Plate 8491

Short Oval Roll Flushing Rim Hopper, Enameled Inside and on Roll Rim, Full S Enameled Inside Vented Trap, Self-raising Seat, Enameled All Over Tank, 1¼-inch Nickel-plated Flush Pipe.

Complete as described..... 20.00

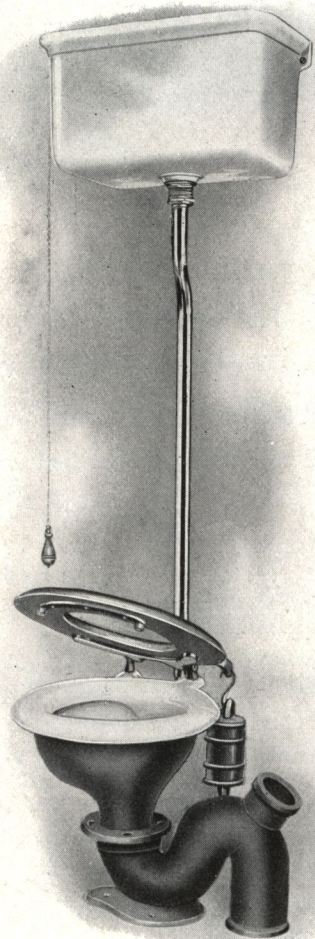


Plate 8491

Nason Porcelain Stall Urinals

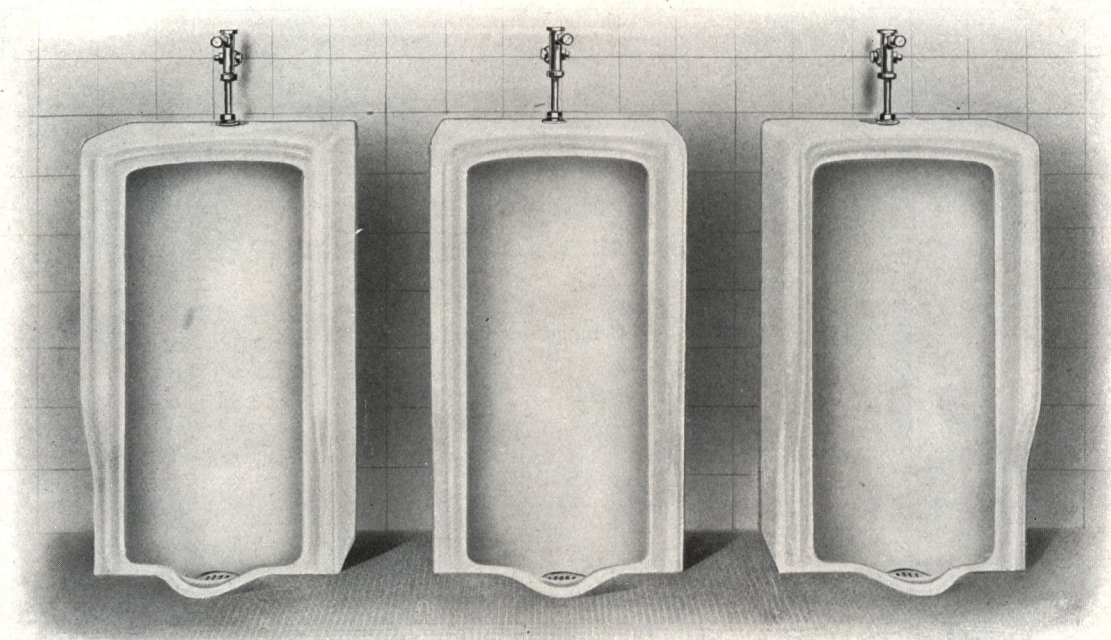


Plate 8500

Nason Porcelain Stall Urinals with Integral Drip Receptor and Projecting Sides, Nickel-plated Brass No. 1½ Push Button Flushing Valve with Integral Shut-off, Nickel-plated Fan Spreader and Inlet Coupling, Cast Brass Waste Strainer and Lock Nut, and Removable Porcelain Grating.

Each Stall complete as described above, Size No. 1	55.00
Each Stall complete as described above, Size No. 2	50.00

Dimensions

Size	No. 1	No. 2
Width along wall, inches	24	18
Height above finished floor, inches	44¼	44¼
Depth below floor, inches	3¾	3¾
Depth back of Stall to extreme front of Lip, inches	20½	20½
Depth back of Stall to front of Partitions	16	16
Center of Waste Outlet to finished wall, inches	12	12

Each of the above Stall Urinals is made in one piece, have joints and all exposed surfaces highly glazed, back is ground, the projecting sides act as partitions rendering the use of separate marble or slate partitions unnecessary; especially designed for clubs, hotels, railways stations, etc.

The distance between the Stalls should be not less than 6 inches to allow ready access for cleaning. Can be set closer or further apart if desired.

Can furnish Tanks to flush these Urinals, if desired, either singly or in groups.

Nason Porcelain Stall Urinals

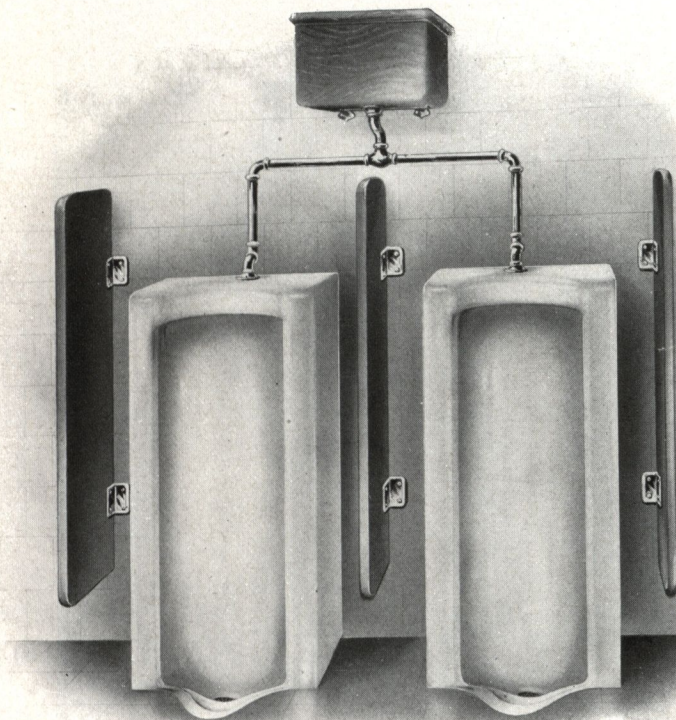


Plate 8510

Nason Porcelain Stall Urinals with Integral Drip Receptor, Nickel-plated Fan Spreader and Inlet Couplings, Cast Brass Waste Strainer and Lock Nut, Removable Porcelain Grating, with Automatic Oak Cistern Copper-lined, with Nickel-plated Flush Pipe.

Price Per Set of 2, as described above (Partitions not included), Size No. 1	108.00
Size No. 2	88.00
For each additional Urinal complete with Fittings as shown and described, add	40.00
Partitions of $\frac{7}{8}$ -inch Italian Marble, 48 x 18 inches, with two Nickel-plated Brass Wall Clamps with Bolts, each	16.00
Partitions of 1-inch Ribbon Slate, 48 x 18 inches, with two Nickel-plated Brass Wall Clamps with Bolts, each	8.00

Dimensions

Size	No. 1	No. 2
Width along wall, inches	24	18
Height above finished floor, inches	44	41
Depth below floor, inches	4	4
Depth back of Stall to extreme front of Lip, inches	$20\frac{3}{4}$	$17\frac{1}{2}$
Depth back of Stall to front of Partitions, inches	$13\frac{3}{4}$	$11\frac{1}{4}$
Center of Waste Outlet to finished wall, inches	12	$10\frac{1}{4}$

Nason Porcelain Stall Urinals

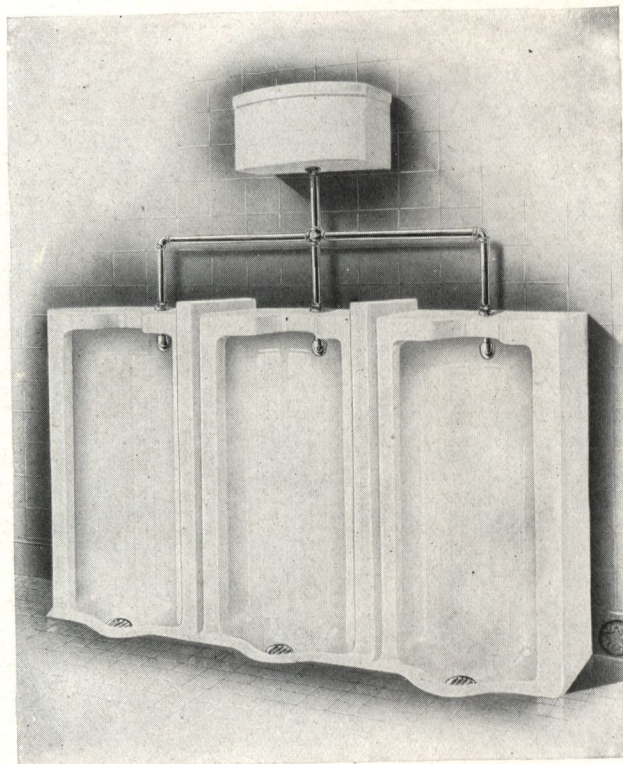


Plate 8520

Nason Porcelain Interlocking Urinal Stalls, with Integral Seam Cover and Drip Receptor, Vitreous China Six-gallon Automatic Tank, Nickel-plated Flush Pipe, Inlet and Fan Spreader and Outlet Strainer.

Note: Each Stall is made in a single unit with Integral Seam Cover for the joint where the Stall joins the next one. No joints under water. These features make this the most sanitary battery Urinal Stall ever made.

Dimensions

	No. 1	No. 2
Size	18	24
Width along wall, Single Stall, inches	48	48
Height over all, top to bottom, inches	44	44
Height, floor line to top of Urinal, inches	37	49
Width over all, Two Part Set, inches	18½	18½
Extreme front of Lip to wall, inches		

Prices

Two Part, complete as described, Class A	136.00	164.00
Two Part, complete as described, Class B	110.00	130.00
For each additional Stall in Battery, Class A	61.00	73.00
For each additional Stall in Battery, Class B	46.00	54.00

These Urinals can also be furnished with our No. 1½ Push Button Flushing Valve as shown on Plate 8500.

Nason Vitreous China Pedestal Urinals



Plate 8530

Nason Vitreous China High Back Pedestal Syphon Jet Urinals with Vitreous China High Tanks.

Dimensions

Height, Urinal, floor to top over all.....	29½ inches
Height, Urinal, floor to top of Lip.....	20¼ inches
Width, Urinal, across back.....	13½ inches

Price

Single S. J. Urinal, complete with 3-gallon Vitreous China High Tank with Automatic Fittings, Brass Floor Flange, Bolts and China Bolt Caps, less Flush Pipe.....	38.00
Single S. J. Pedestal Urinal only.....	21.50

Plate 8531

Washdown Pedestal Urinals

Not Illustrated

Single Washdown Urinal, complete with 3-gallon Vitreous China High Tank with Automatic Fittings, Brass Floor Flange, Bolts and China Bolt Caps, less Flush Pipe.....	35.50
Single Washdown Pedestal Urinal only.....	19.25

Dimensions

Height, Urinal, floor to top over all.....	29 inches
Height, Urinal, floor to top of Lip.....	20 inches
Width, Urinal across back.....	13½ inches

Nason Pedestal Urinal

The Carleton

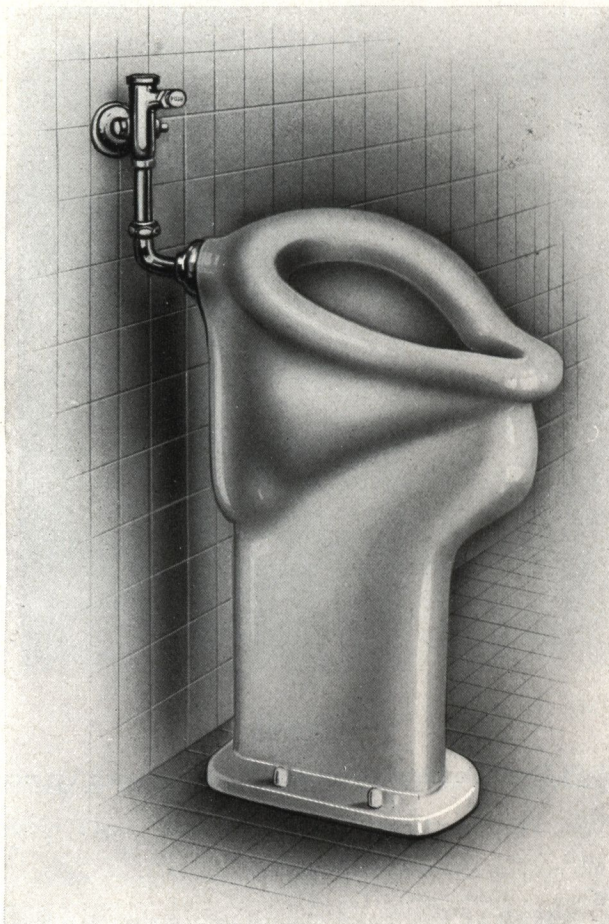


Plate 8540

The Carleton Vitreous China Pedestal Urinal, with High Back and Extended Lip, with No. 1½ Nickel-plated Push Button Flushing Valve with Integral Shut-off, Brass Floor Flange, Bolts and China Bolt Caps.

Plate 8540	Syphon Jet Urinal, complete as described.....	30.00
Plate 8541	Washdown Urinal, complete as described.....	27.00

Dimensions

Floor to top of Lip.....	25 inches
Floor to top of Back.....	29 inches
Center of Inlet to floor.....	27 inches
Center of Outlet to face of Spud.....	11 inches
Size of Spud.....	1¼ inches

Nason De Luxe Urinal

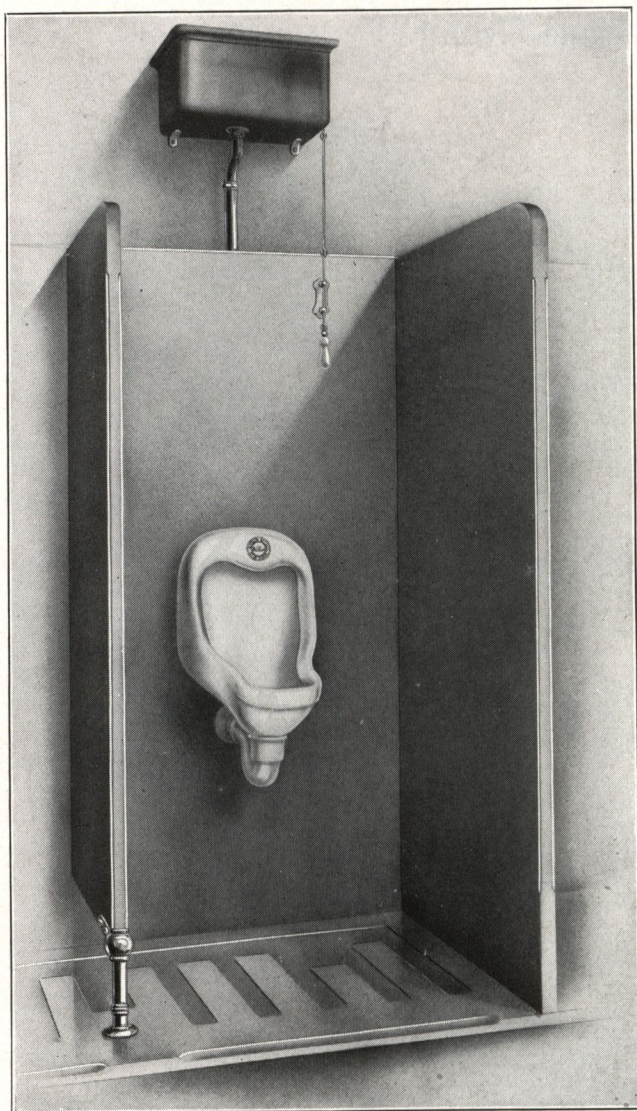


Plate 8550

Nason De Luxe Urinal and Connections, No. 6 Tank, Rod and Pull, Nickel-plated Brass Brackets, and Flush Pipe 2 feet long.

Plate 8550 De Luxe Urinal as described, each..... 25.75
 Plate 8551 De Luxe Urinal and Connections, only as illustrated in sectional view..... 17.75

Stalls with Countersunk Floor Slabs for 2 Urinals, Height 5 feet 6 inches; Width inside of Stall, 2 feet 2 inches; Depth of End Partitions, 2 feet 4 inches; Depth of Middle Partition, 1 foot 8 inches; with Nickel-plated Brass Standards for Middle Partition and Nickel-plated Brass Angle Clamps.

Stalls—Plate 8552

	Italian Marble	Slate
Two Stalls, as described.....	150.00	48.00
Each Additional Stall, Continuous.....	50.00	32.00

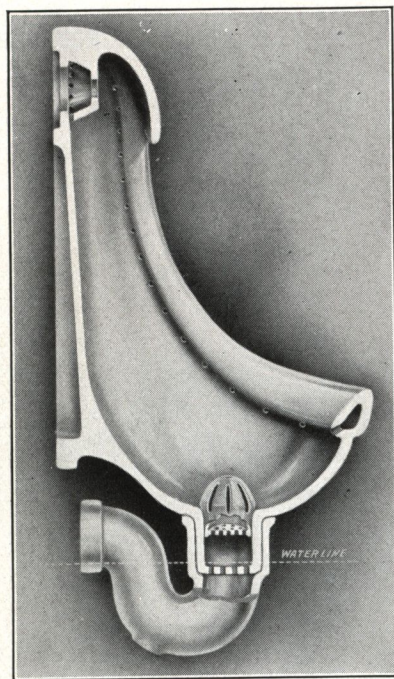


Plate 8551

In the De Luxe we introduce a Urinal which is entirely novel in its construction, in that it can be instantly disconnected, taken down, cleaned, and replaced with no other tools than a common wrench.

The special Brass Fitting through which the Urinal receives its supply of water acts also as a concealed hanger for supporting the fixture. The removal of a nut on this fitting disconnects the Urinal and permits of its removal. It can be as readily replaced.

The De Luxe has no exposed brass work or attachments to become tarnished or discolored; the trap is Iron Enameled inside and outside as is also the wall Escutcheon.

The water line is established at a point which leaves no unventilated pipe and affords an opportunity of removing tooth-picks, matches, etc., without removing Urinal.

The fixture is eminently practical and sanitary; in form and construction is a radical departure from others on the market.

Nason De Luxe Urinal



Plate 8560

Nason De Luxe Urinal with Enameled Iron Trap and Wall Escutcheon, No. 1½ Nickel-plated
 Push Button Flushing Valve with Integral Shut-off..... 28.00

For detailed description of De Luxe Urinals, see Plate 8551.

Nason-York Urinals

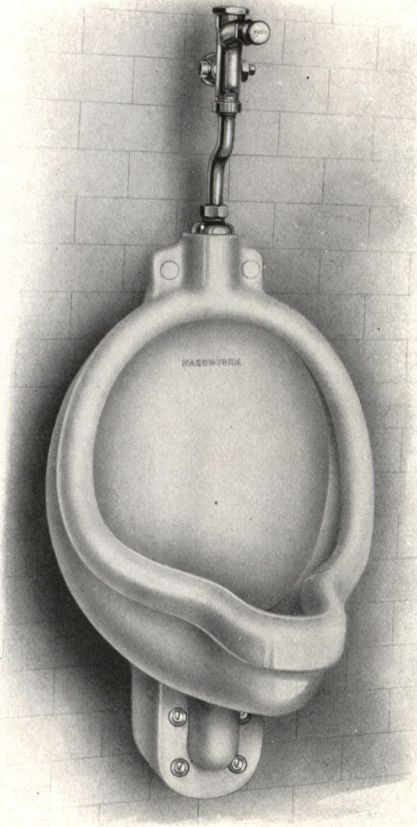


Plate 8570

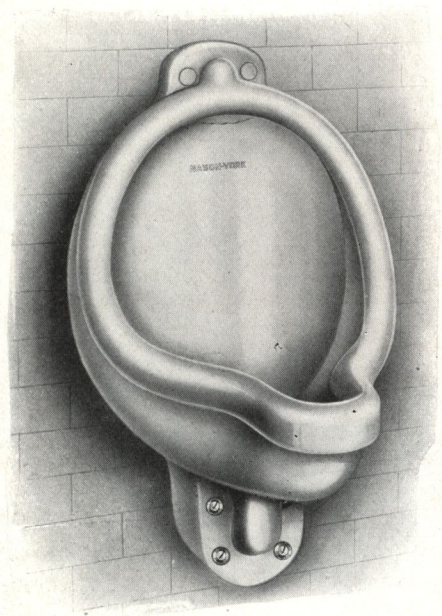


Plate 8571

Plate 8570

Plate 8570 Nason-York Urinal with Water-sealed Brass Trap and No. 1½ Nickel-plated Push Button Flushing Valve with Integral Shut-off..... 24.50

Plate 8570A (Not Illustrated)

Plate 8570A Nason-York Urinal with No. 6 Hardwood Cabinet Finish Cistern, Rod and Pull, Nickel-plated Brass Brackets and Flush Pipe..... 25.75

See Plate 8591 for style of tank

Plate 8571 shows a Nason-York Urinal with Back Inlet Connection. Can be furnished with Flush Valve or Tank Operation, as described above.

Additional charge for Back Inlet Feature 1.00

Note: The Joint between the Brass Trap and Earthenware on Nason-York Urinals is water-sealed, so that while any defect in the Joint will be indicated by a leak, it cannot unseal the Trap. The Urinal can be easily removed without affecting the Trap. They are made of high grade Vitreous China and stamped with our name, and guaranteed not to craze.

Nason Syphon Jet Urinal



Plate 8580

Nason Syphon Jet Urinal with Concealed Brass Outlet Connection, No. 2½ Nickel-plated
 Push Button Flushing Valve with Integral Shut-off..... 30.00

Note: Syphon Jet Urinals can be furnished with Back Inlet Connection, if desired.

When Urinal is flushed, a portion of the water passes to the Jet when the contents of the Bowl are syphoned out. The Bowl is then re-filled with clean water.

Nason Washout and Syphon Jet Urinals

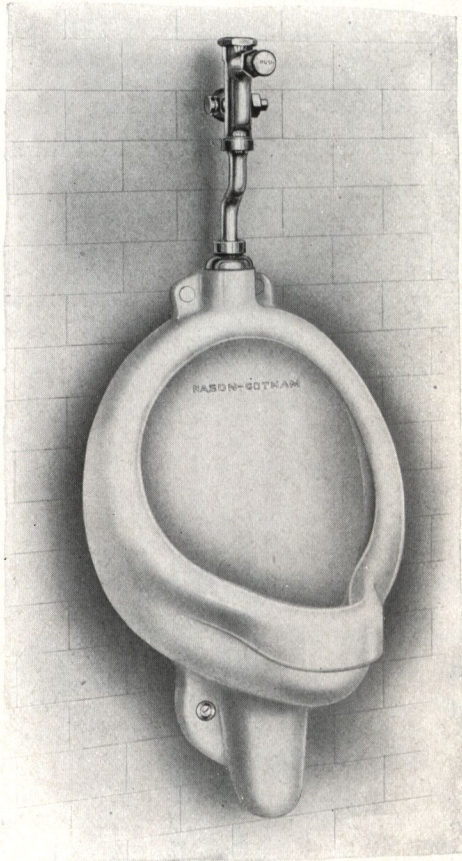


Plate 8590

Plate 8590

Nason-Gotham Washout Urinal, with Water-sealed Brass Trap, and No. 1½ Nickel-plated Push-button Flushing Valve with Integral Shut-off.

Complete..... 24.00

Plate 8591

Nason Syphon Jet Urinal with Concealed Brass Outlet Connection, No. 9 Monarch Hardwood Cistern with Rod and Pull, Nickel-plated Flush Pipe and Holder. 30.00

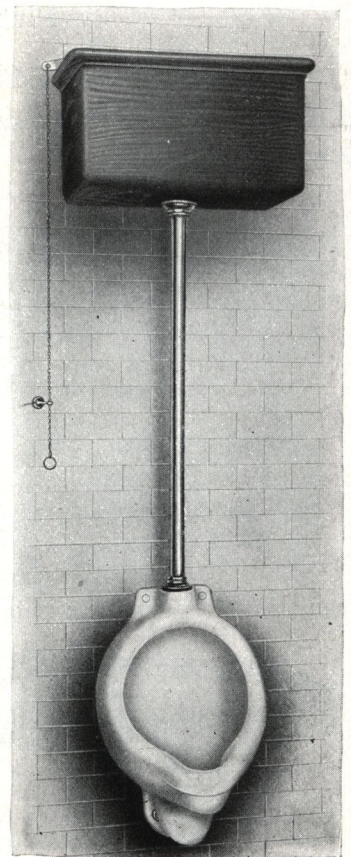


Plate 8591

Nason Urinal Flush Valve

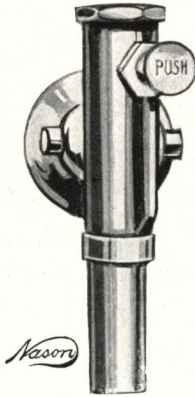


Plate 8600

Plate 8600

Nason No. 1 1/2 Nickel-plated Urinal Flushing Valve, with China Index Front Push-button, Integral Shut-off, Back Inlet and Wall Escutcheon.

1/2-inch with Straight Tail Piece.....	12.00
1/2-inch with Offset Tail Piece.....	13.00
If without Integral Shut-off, deduct.....	1.50

Plate 8601

Nason No. 3 Nickel-plated Urinal Flushing Valve, with China Index Front Push-button, Integral Shut-off, Back Inlet and Wall Escutcheon.

1/2-inch with Straight Tail Piece.....	10.00
1/2-inch with Offset Tail Piece.....	11.00
If without Integral Shut-off, deduct.....	1.50

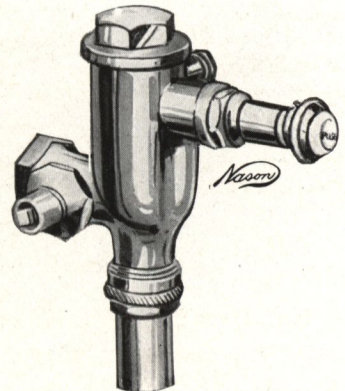


Plate 8601

Plate 8602

Nason No. 11 Nickel-plated Urinal Flushing Valve, Oil Controlled, with Universal Handle and Regulating Screw, and Inlet Union for 1/2-inch Iron Pipe.

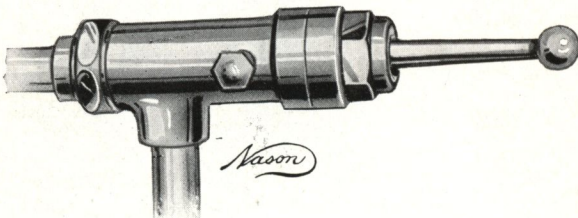


Plate 8602

1/2-inch, as described.....	15.00
If with Shut-off.....	17.00

The No. 11 Valve can be used with any style of urinal and in any position.

Nason Slate Urinal Stalls

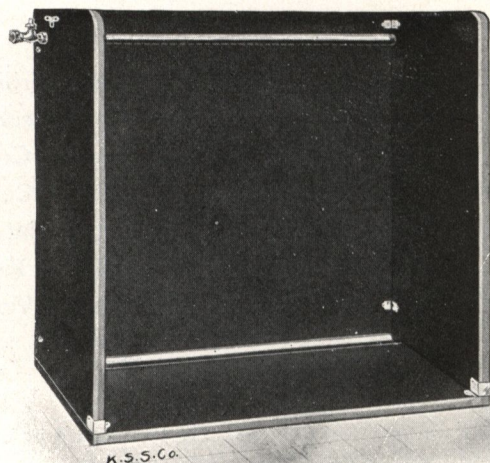


Plate 8610

Plate 8610

No. B10 $\frac{1}{2}$ Slate Urinal Stall made with either Galvanized or Enameled Iron Gutter, 1 $\frac{1}{4}$ -inch thick Floor Slab as shown, or with Gutter cut in Floor Slab made of 2-inch thick Slate; Ends and Back 1 inch thick; Ends finished both sides, Back one side. With Nickel-plated Brass Perforated Wash-down Pipe, with Loose Key Stop, Heavy Nickel-plated Brass Angles and Bolts for supporting in position.

Dimensions

Height, 4 feet 6 inches or 5 feet.
Depth, 1 foot 8 inches.

Prices

Length, feet.....	4	6	8	10	12
Complete as shown, 4 feet 6 inches high, with Galvanized Cast Iron Gutter..	40.00	52.50	66.00	80.00	95.00
If with Slate Gutter.....	38.50	48.50	61.00	72.00	83.00
Complete as shown, 5 feet high, with Galvanized Cast Iron Gutter.....	45.00	57.50	72.00	87.00	102.00
If with Slate Gutter.....	40.00	50.50	63.00	76.00	90.00

Note: If Enameled Iron Gutter is desired instead of Galvanized Iron or Slate, add to the price of Galvanized Iron Gutter for the first 4 feet, 5.00; for each additoinal 2 feet, 1.75.

Plate 8611

No. B11 Slate Urinal Stall with 1-inch Ends and Partitions finished both sides, Rabbitted Back, 2 inch thick Countersunk Base, Nickel-plated Brass Clamps and Bolts, Nickel-plated Brass Wash-down Pipe with Loose Key Stop, with either Galvanized or Enameled Cast Iron Gutter, with Outlet Connection at either end fitted for 2-inch Cast Iron Pipe.

Dimensions

Height, 5 feet or 5 feet 6 inches.
Depth, 1 foot 8 inches.
Center to center of Partitions, 2 feet.

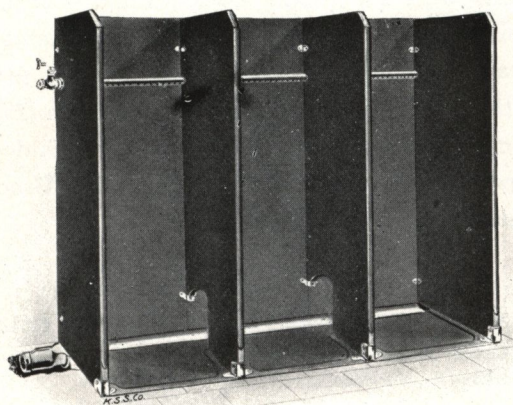


Plate 8611

Prices

Height, feet.....	With Galvanized Cast Iron Gutter		For Enameled Iron Gutter Add
	5	5 $\frac{1}{2}$	
Three Stalls, complete as shown.....	80.00	85.00	6.50
For each Stall (continuous), add.....	22.00	23.00	2.00
If less than 3 Stalls are required, deduct for each Stall.....	22.00	23.00	2.00

Note: When ordering either of the above Stalls, state location of Waste Outlet and Supply, whether right or left-hand end.

Nason Slate Urinal Stalls

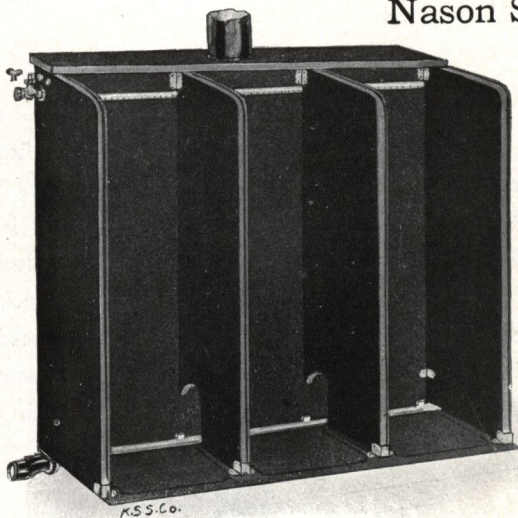


Plate 8620

No. B11½ S Single Ventilated Slate Urinal Stall with Partitions, Back, Cap, Countersunk Floor Slab with Galvanized or Enameled Cast Iron Gutter, Outlet at either end fitted with Connection for 2-inch Cast Iron Pipe, Nickel-plated Brass Perforated Wash-down Pipe with Loose Key Stop. Partitions, Braces, Back Supports and Vent Collar.

Dimensions

Height, 5 feet or 5 feet 6 inches. Depth, 1 foot 8 inches.
Center to center of Partitions, 2 feet.
Air space at back, 4 inches.

Plate 8620

Prices

	With Galvanized Cast Iron Gutter		For Enameled Iron Gutter Add
Height, feet.....	5	5½	
Three Stalls, complete as shown.....	87.00	92.00	6.50
For Each Stall Continuous, add.....	24.50	25.50	2.00
If less than 2 Stalls are required, deduct for each Stall.....	24.50	25.50	2.00

Plate 8621

No. B11½ D Double Ventilated Slate Urinal Stalls with Partitions, Backs, Caps, Countersunk Floor Slabs, with Galvanized or Enameled Cast Iron Gutters, Outlet at either end fitted with Connection for 2-inch Cast Iron Pipe, Nickel-plated Brass Perforated Wash-down Pipes with Loose Key Stops, Partition Braces, Back Supports and Vent Collar.

Dimensions

Height, 5 feet or 5 feet 6 inches. Depth, 1 foot 8 inches.
Center to center of Partitions, 2 feet. Air space between backs, 4 inches.

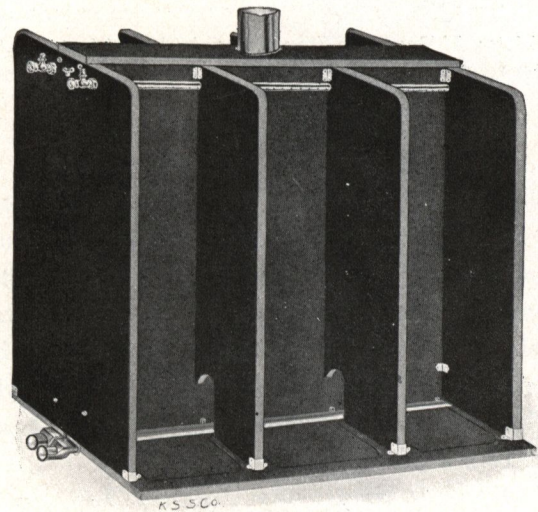


Plate 8621

Prices

	With Galvanized Cast Iron Gutter		For Enameled Iron Gutter Add
Height, feet.....	5	5½	
Three Double Stalls, complete as shown.....	174.00	183.00	13.00
For each Double Stall (Continuous), add.....	50.00	52.00	3.25
If less than 3 Double Stalls are required, deduct for each Double Stall.....	50.00	52.00	3.25

Note: Through an opening at the Back and directly over the Gutter, provided by Backs resting on Brackets extending over Gutter 4 inches from wall (on single), 4 inches between Backs (on double), passes a constant flow of air into the air space behind Backs and out at the top through a vent flue. By connecting with a warm air flue or chimney an efficient draught is generated. The entire surface of the Backs is constantly flushed from a perforated Wash-down Pipe with Loose Key Stop to regulate the flow of water. This ventilating connection effects a satisfactory ventilation of the entire room.

Nason Porcelain Enameled Iron Urinals

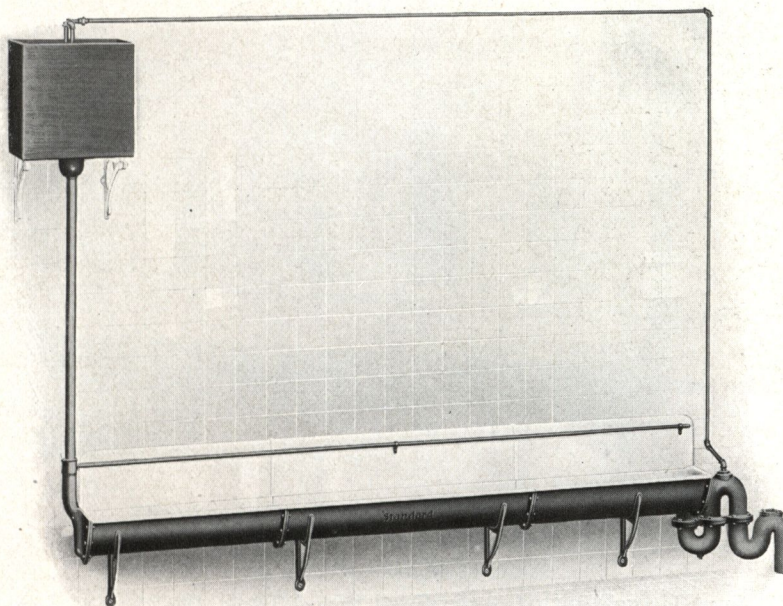


Plate 8630

Automatic Syphon Eduction Urinal with Copper-lined Wood Tank, Galvanized Iron Flush and Air Pipes, Perforated Wash-down Pipe fitted along back. (Brass on Enameled and Galvanized Iron on Painted Urinals.)

Plate 8631

Urinal with Pressed Steel Partitions (as shown on Plate 8640) 24 inches apart. See prices below and order by Plate 8631.

Prices

Length Urinal Feet	Painted		Enameled		Length Urinal Feet	Painted		Enameled	
	Without Partitions Plate 8630	With Partitions Plate 8631	Without Partitions Plate 8630	With Partitions Plate 8631		Without Partitions Plate 8630	With Partitions Plate 8631	Without Partitions Plate 8630	With Partitions Plate 8631
4	60.00	80.00	105.00	127.50	10	100.00	140.00	195.00	240.00
5	66.65	.....	120.00	.....	11	106.65	.....	210.00	.....
6	73.30	100.00	135.00	165.00	12	113.30	160.00	225.00	277.50
7	80.00	.....	150.00	.....	14	126.50	180.00	255.00	315.00
8	86.65	120.00	165.00	202.50	15	133.30	.....	270.00	.....
9	93.30	.....	180.00	.....	16	140.00	200.00	285.00	352.50

If with Floor Brackets instead of Wall Brackets shown, add each, 1.50.

Longer Urinals can be furnished if desired. Prices on application.

Painted Cast Iron Tank can be furnished without extra charge.

Note: Urinals with Enameled Interior and Outlet on Right-hand End as shown will be furnished, unless otherwise ordered.

Nason Porcelain Enameled Iron Urinals

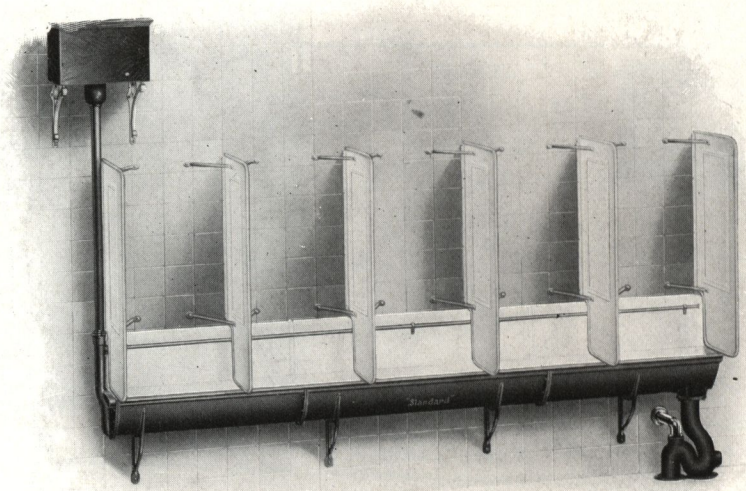


Plate 8640

Automatic Washout Urinal, with Copper-lined Wood Tank, Galvanized Iron Flush Pipe, Pressed Steel Partitions 24 inches apart, Perforated Wash-down Pipes fitted along Back and Front (Brass on Enameled and Galvanized Iron on Painted Urinals) and with Brass Capping along Front.

Prices							
Painted		Enameled		Painted		Enameled	
Length Urinal Feet	Without Partitions	With Partitions	Without Partitions	Length Urinal Feet	Without Partitions	With Partitions	Without Partitions
4	54.65	74.65	91.50	12	108.00	154.65	211.50
5	61.30	.....	106.50	14	121.30	174.65	241.50
6	68.00	94.65	121.50	16	134.65	194.65	271.50
7	74.65	.....	136.50	18	148.00	214.65	301.50
8	81.30	114.65	151.50	20	161.30	229.65	331.50
10	94.65	134.65	181.50	..	.....	.....	.....

Longer Urinals can be furnished. Prices on application.
Painted Cast Iron Tank can be furnished without extra charge.
Note: Urinals with Enameled Interior and Outlet on Right-hand End as shown will be furnished unless otherwise ordered.

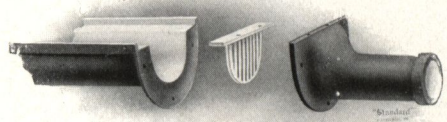


Plate 8641

Porcelain Enameled Iron Urinal Stall Gutters, in sections 5 feet long. Gutter for single range of Stalls is 4 inches wide, for Double Range of Stalls 8 inches wide. Gutters can be furnished with End or Bottom Outlets. Single Stall Gutter furnished with End Outlet to fit 2-inch Soil Pipe. Double Stall Gutter furnished with End Outlet to fit 4-inch Soil Pipe.

Prices		Single	Double
One Section with Grating and Outlet Piece.....		14.00	21.00
Extra Sections, any length not exceeding 5 feet, each.....		12.00	19.00
Bottom Outlet Gutter furnished at same price as End Outlet.			

Nason Public Urinals

Plate 8650

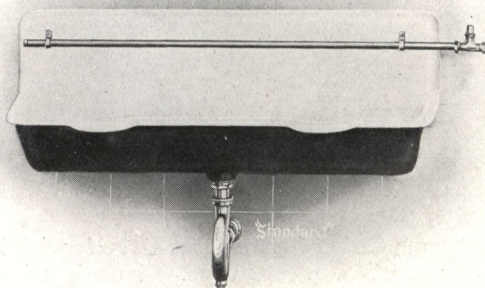


Plate 8650

Nason Porcelain Enameled Iron Roll Rim One-piece Lipped Urinal, supported on Concealed Wall Hanger, with Brass Bee Hive Strainer, Perforated Brass Wash-down Pipe with Loose Key Stop, and 1½-inch Nickel-plated Half S Trap.

Waste Coupling for Lead Pipe is furnished when Urinal is ordered without trap.

Furnished with Center Outlet only.

Prices

Complete as Described			Less Wash-down Pipe, Stop and Trap		
	Painted	Enameled		Painted	Enameled
Length 24 inches.....	19.25	26.50	Length 24 inches.....	13.25	20.25
Length 36 inches.....	24.50	36.25	Length 36 inches.....	18.00	29.25
Length 42 inches.....	26.00	38.25	Length 42 inches.....	19.25	31.50
Length 48 inches.....	26.75	41.50	Length 48 inches.....	20.75	33.75
If without 1½-inch Trap, deduct.....			3.00		
If without Loose Key Stop, deduct.....			1.50		

Plate 8651

Nason Porcelain Enameled Iron Roll Rim One-Piece Urinal, supported on Concealed Wall Hanger, with Brass Bee Hive Strainer, Perforated Wash-down Pipe (Brass on Enameled and Galvanized Iron on Painted), Loose Key Stop and 1½-inch Nickel-plated Half S Trap.

Furnished with Center Outlet only.

Waste Coupling for Lead Pipe is furnished when Urinal is ordered without trap.

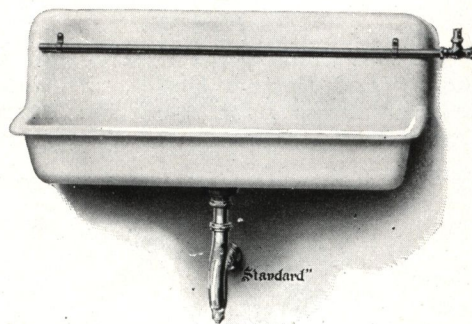


Plate 8651

Prices

Complete as Described			Less Wash-Down Pipe, Stop and Trap		
	Painted	Enameled		Painted	Enameled
Length 24 inches.....	16.50	22.00	Length 24 inches.....	8.75	15.75
Length 30 inches.....	17.50	24.50	Length 30 inches.....	11.25	18.00
Length 36 inches.....	19.00	27.15	Length 36 inches.....	12.75	20.25
Length 42 inches.....	20.75	30.00	Length 42 inches.....	14.00	22.50
Length 48 inches.....	22.25	32.50	Length 48 inches.....	15.25	24.75
Length 60 inches.....	25.50	40.00	Length 60 inches.....	18.00	31.50
If without 1½-inch Trap, deduct.....			3.00		
If without Loose Key Stop, deduct.....			1.50		



Plate 8660

Vitreous China Syphon Jet Urinal with Hood and Vent, Wall Inlet and Outlet. Furnished with $1\frac{1}{4}$ -inch Brass Inlet and 2-inch Brass Outlet Connection.

Each..... 17.00



Plate 8661

Vitreous China Syphon Jet Urinal, with Back Supply and Wall Outlet. Furnished with $1\frac{1}{4}$ -inch Brass Inlet and 2-inch Brass Outlet Connections.

Each..... 17.00



Plate 8662

Vitreous China Syphon Jet Urinal, with Top Supply and Bottom Outlet. Furnished with $1\frac{1}{4}$ -inch Brass Inlet Spud and 2-inch Brass Outlet Spud.

Each..... 16.00

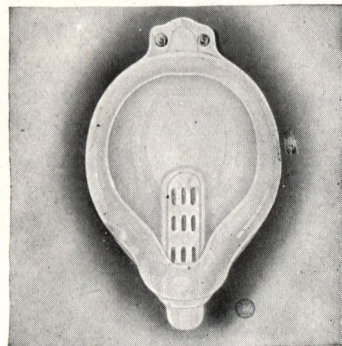


Plate 8663

Vitreous China Washout Urinal with Bee-Hive Strainer, Wall Inlet and Outlet. Furnished with $\frac{3}{4}$ -inch Brass Inlet and 2-inch Brass Outlet Connections.

Each..... 17.00



Plate 8664

Vitreous China Bedfordshire Flat Back Urinal with Lip and Flushing Rim.

No.	1	2	3
Size, inches.....	15 x 18	13 x 15	12 x 14
Each.....	10.00	8.00	7.00

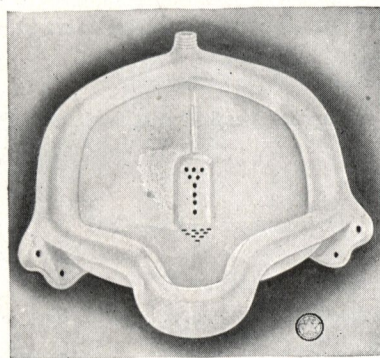


Plate 8665

Vitreous China Bedfordshire Corner Urinal with Lip and Flushing Rim.

No.	1	2	3
Size, inches.....	13 x 13	11½ x 11½	10½ x 10½
Each.....	10.00	8.00	7.00

Nason Porcelain Kitchen Sink

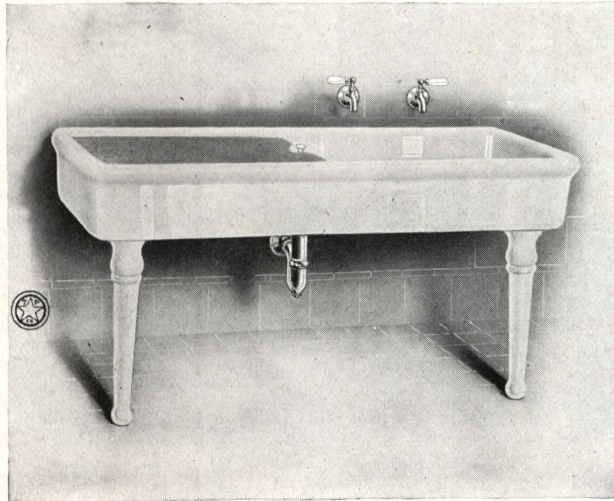


Plate 8670

The Superb Solid Porcelain All Roll Rim Sink Combination with Integral Drain Shelf, on Porcelain Legs and Iron Wall Clamps, Nickel-plated Quick Opening Compression Faucets, Reliance Waste and Overflow, 1½-inch Half S Trap to wall and Rubber Mat for Drain Shelf.

Dimensions

Length.....	62 inches
Width.....	26½ inches

Price of Sink only, Class A.....	106.75
Price of Sink only, Class B.....	87.50
Porcelain Legs and Iron Wall Clamps, per pair.....	9.50
White Enamel Painted Iron Legs and Wall Clamps, per pair.....	2.50
Nickel-plated Reliance Waste and Overflow.....	5.00
Nickel-plated 1½-inch Half S Trap.....	3.75
Nickel-plated ⅝-inch Quick Opening Compression Faucets, per pair.....	5.00
Rubber Mat, 22½ x 18 inches, to fit Drain Shelf.....	2.50

Nason Porcelain Kitchen Sink

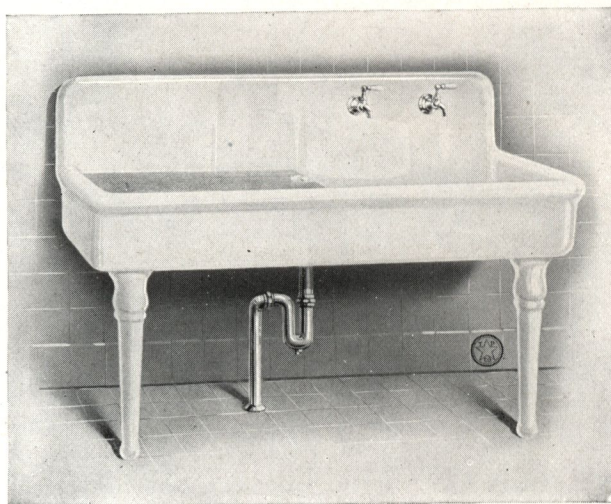


Plate 8680

The Columbia Solid Porcelain Sink Combination with Integral Back and Drain Shelf, on Porcelain Legs and Iron Wall Clamps, Nickel-plated Quick Opening Compression Faucets with China Handles, Reliance Waste and Overflow, 1½-inch Full S Trap to floor and Rubber Mat for Drain Shelf.

Dimensions

Length.....	.62 inches
Width.....	26½ inches
Height of Back.....	9 inches

Price of Sink only, Class A.....	128.50
Price of Sink only, Class B.....	82.75
Porcelain Legs and Iron Wall Clamps, per pair.....	9.50
White Enamel Painted Iron Legs and Wall Clamps, per pair.....	2.50
Nickel-plated Reliance Waste and Overflow.....	5.00
Nickel-plated 1½-inch Full S Trap.....	5.00
Nickel-plated ⅝-inch Quick Opening Compression Faucets, per pair.....	5.00
Rubber Mat, 22½ x 18 inches to fit Drain Shelf.....	2.50

This Combination can be furnished with Drain Shelf on Right or Left-hand Side.

Nason Porcelain Kitchen Sink

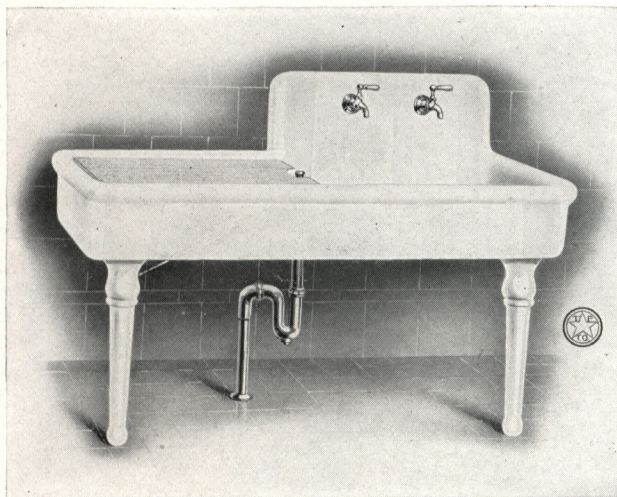


Plate 8690

The Lansing Solid Porcelain Sink Combination with Integral Back over Sink, and all Roll Rim Extension Drain Shelf, set on Porcelain Legs and Iron Wall Clamps, Nickel-plated Quick Opening Compression Faucets with China Handles, Reliance Waste and Overflow, 1½-inch Full S Trap to floor, and Rubber Mat for Drain Shelf.

Dimensions

Length.....	62 inches
Width.....	26½ inches
Height of Back.....	9 inches

Price of Sink only, Class A.....	112.00
Price of Sink only, Class B.....	72.50
Porcelain Legs and Iron Wall Clamps, per pair.....	9.50
White Enamel Painted Iron Legs and Wall Clamps, per pair.....	2.50
Nickel-plated Reliance Waste and Overflow.....	5.00
Nickel-plated 1½-inch Full S Trap.....	5.00
Nickel-plated ⅝-inch Quick Opening Compression Faucets, per pair.....	5.00
Rubber Mat, 22½ x 18 inches to fit Drain Shelf.....	2.50

This Combination can be furnished with Drain Shelf on Right or Left-hand Side.

Nason Porcelain Kitchen Sink

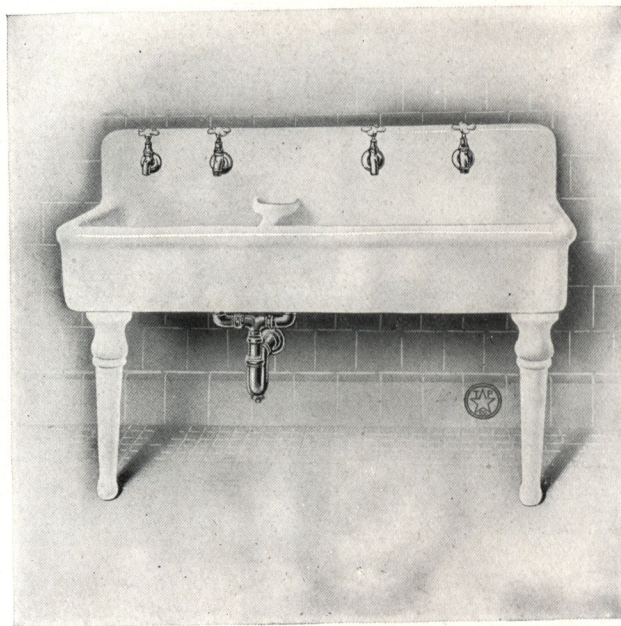


Plate 8700

The Twin Solid Porcelain Double Sink Combination with Integral Back, Partition and Soap Cup, on Porcelain Legs and Iron Wall Clamps, Nickel-plated Compression Faucets with China Index Handles, Waste Plugs, Couplings, Twin Connection and 2-inch Half S Trap.

Dimensions

No.....	1	2
Size over all, inches.....	56 x 26	62 x 26
Size of Left-hand Compartment, inches.....	19 x 20	22 x 20
Size of Right-hand Compartment, inches.....	31 x 20	34 x 20
Height of Back, inches.....	9	9
Price, Sink only, Class A.....	117.25	154.00
Price, Sink only, Class B.....	93.75	99.50

Porcelain Legs and Iron Wall Clamps, per pair.....	9.50
White Enamel Painted Iron Legs and Wall Clamps, per pair.....	2.50
Nickel-plated Waste Plug and Coupling, each.....	1.70
Nickel-plated Compression $\frac{5}{8}$ -inch Faucets, per pair.....	3.50
Nickel-plated Twin Waste Connection.....	5.00
Nickel-plated 2-inch Half S Trap.....	5.00

Nason Porcelain Kitchen Sink



Plate 8710

The National Solid Porcelain Integral Back Sink with End Recess, Porcelain Legs and Iron Wall Clamps, Nickel-plated Reliance Waste and Overflow, $\frac{5}{8}$ -inch Quick Opening Compression Faucets.

Dimensions

Size of Sink, inches.....	30 x 24	36 x 24
Height of Back, inches.....	9	9
Depth Inside, inches.....	7½	7½
Price, Sink only, Class A.....	36.25	46.25
Price, Sink only, Class B.....	24.00	28.50
Price, Sink only, Buff Ware.....	26.50	29.75

Recess extends 5 inches beyond end of Sink, making length over all 41 inches.

Sink can be furnished with Recess at Right or Left-hand End.

Porcelain Legs and Iron Wall Clamps, per pair.....	9.50
Buff Ware Legs and Iron Wall Clamps, per pair.....	6.50
White Enamel Painted Iron Legs and Wall Clamps, per pair.....	2.50
Bronzed Iron Legs and Wall Clamps, per pair.....	2.50
Nickel-plated Reliance Waste and Overflow.....	5.00
Nickel-plated $\frac{5}{8}$ -inch Quick Opening Compression Faucets, per pair.....	3.50

Nason Porcelain Kitchen Sink

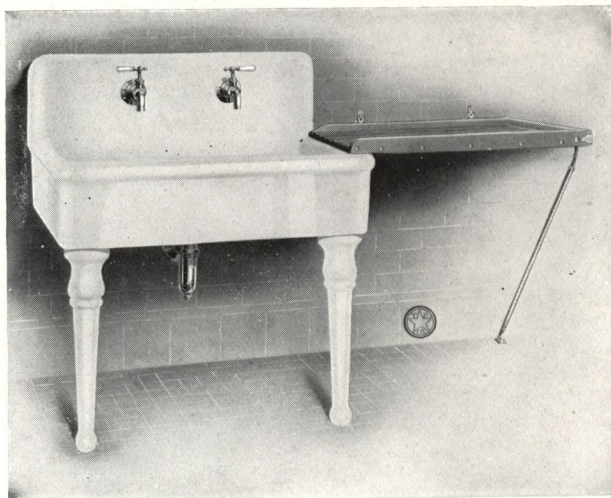


Plate 8720

The America Solid Porcelain Kitchen Sink, with Integral Back, Porcelain Legs and Iron Wall Clamps, Nickel-plated Quick Opening Compression Faucets, Waste Strainer, Half S Trap and Ash Reinforced Drain Board with Nickel-plated Telescopic Leg and Wall Hinges.

Size of Sink, inches.....	24 x 22	30 x 22	36 x 24	42 x 24
Height of Back, inches.....	9	9	9	9
Depth Inside, inches.....	7½	7½	7½	7½
Price, Sink only, Class A.....	26.25	31.25	36.25	46.75
Price, Sink only, Class B.....	17.25	20.50	23.75	30.50
Price, Sink only, Buff Ware.....	17.00	20.25	23.00	30.00

Porcelain Legs and Iron Wall Clamps, per pair.....	9.50
Buff Ware Legs and Iron Wall Clamps, per pair.....	6.50
White Enamel Painted Iron Legs and Wall Clamps, per pair.....	2.50
Bronzed Iron Legs and Wall Clamps, per pair.....	2.50
Nickel-plated Waste Strainer and Coupling.....	2.70
Nickel-plated 2-inch Half S Trap.....	5.00
Nickel-plated 5/8-inch Quick Opening Compression Faucets, per pair.....	3.50
Ash Drain Board with Nickel-plated Telescopic Leg and Hinges.....	12.50

Nason Porcelain Kitchen Sinks

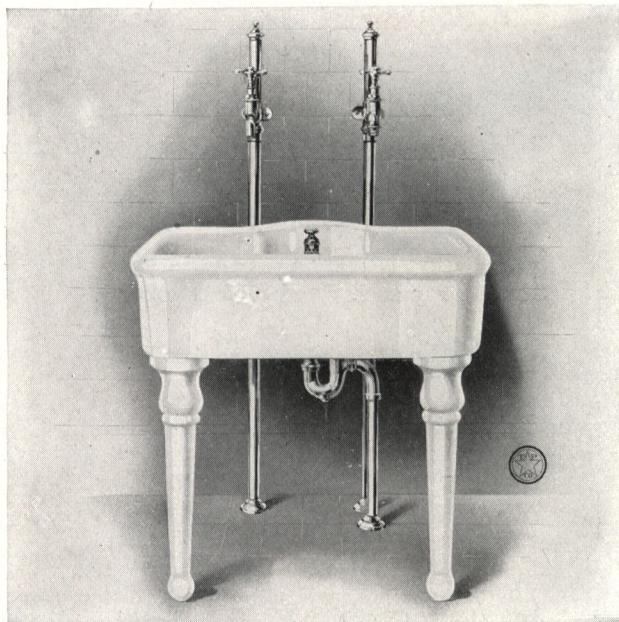


Plate 8730

Plate 8730

The Hudson Solid Porcelain All Roll Rim Kitchen Sink with Recess, on Porcelain Legs and Iron Wall Straps, Nickel-plated Air Chamber Supply Pipes, with Compression Faucets with China Index Handles, Reliance Waste and Overflow and 1½-inch Full S Trap to floor.

Depth Inside, all sizes
7½ inches

Size of Sink, inches....	30x20	36x24	42x24	48x24
Price, Sink only, Class A	16.75	21.00	26.50	33.25
Price, Sink only, Class B	12.00	15.00	19.00	23.75

Porcelain Legs and Iron Wall Straps, per pair.....	9.50
White Enamel Painted Iron Legs and Wall Straps, per pair.....	2.50
Nickel-plated Air Chamber Supply Pipes with Compression Indexed Faucets, per pair.....	12.50
Nickel-plated Reliance Waste and Overflow.....	5.00
Nickel-plated 1½-inch Full S Trap.....	5.00

Plate 8731

The Superior Solid Porcelain Vegetable Sink, with Integral Back, Drain Shelf and Round Corner Compartment, on Porcelain Legs and Iron Wall Clamps, Nickel-plated Compression Combination Spout Supply Fixture with China Index Handles, Reliance Waste and Overflow and 1½-inch Full S Trap to floor.

Size of Sink, inches.....	30 x 22	36 x 24
Depth, inside, inches.....	9	9
Height of Back, inches.....	9	10
Price as described, Class A.....	63.75	83.00
Price as described, Class B.....	58.00	64.75

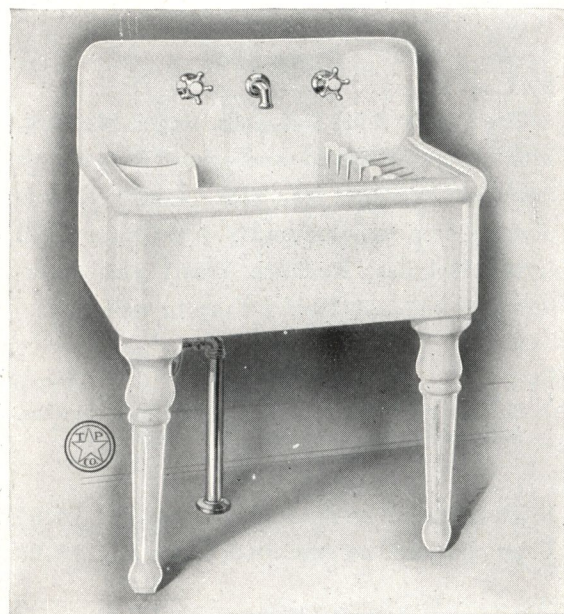


Plate 8731

Nason Porcelain Sinks

Plate 8740

The Atlantic Solid Porcelain All Roll Rim Kitchen Sink, on Porcelain Legs and Iron Wall Straps, with Nickel-plated $\frac{5}{8}$ -inch Quick Opening Compression Faucets, with China Handles, Waste Strainer and $1\frac{1}{2}$ -inch Full S Trap to floor with Vent to wall.

Depth Inside, all sizes

$7\frac{1}{2}$ inches

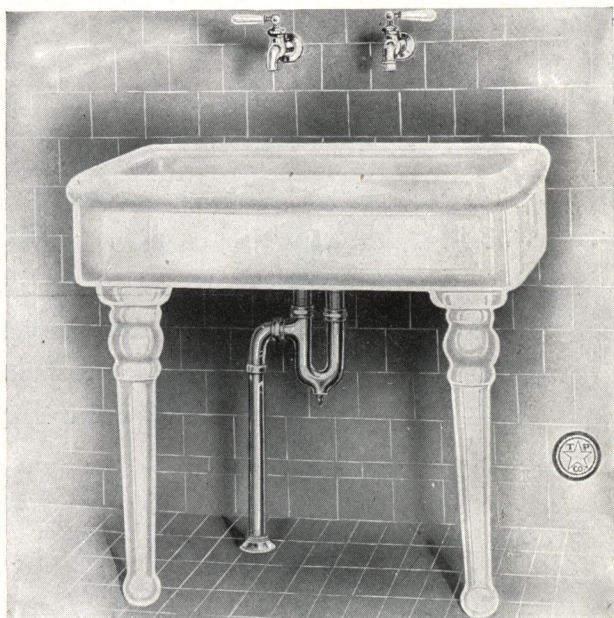


Plate 8740

Size of Sink, inches.....	24 x 17	30 x 20	36 x 23	42 x 24	48 x 24
Price, Sink only, Class A.....	12.50	15.50	18.50	24.00	30.00
Price, Sink only, Class B.....	7.75	10.75	13.50	17.25	21.50
Price, Sink only, Buff Ware.....	7.60	10.75	13.25	16.75	20.50

Porcelain Legs and Iron Wall Clamps, per pair.....	9.50
Buff Ware Legs and Iron Wall Clamps, per pair.....	6.50
White Enamel Painted Iron Legs and Wall Clamps, per pair.....	2.50
Bronzed Iron Legs and Iron Wall Clamps, per pair.....	2.50
Nickel-plated Waste Strainer and Coupling.....	1.70
Nickel-plated $1\frac{1}{2}$ -inch Full S Vented Trap.....	5.00
Nickel-plated $\frac{5}{8}$ -inch Quick Opening Compression Faucets, per pair.....	5.00

Plate 8741

The Pacific Solid Porcelain Vegetable Sink, with Integral Back and End Recess, on Porcelain Legs and Iron Wall Clamps, Nickel-plated Compression Faucets with China Cross Index Handles, Reliance Waste and Overflow and $1\frac{1}{2}$ -inch Half S Trap to wall.

Dimensions

Length over all, 41 inches. Width, 24 inches.
Sink only, inside, $20\frac{1}{2}$ x $18\frac{1}{2}$ x $7\frac{1}{2}$ inches.

Price complete as described, Class A.. 76.00

Price complete as described, Class B.. 55.00



Plate 8741

Nason Porcelain Kitchen Sink

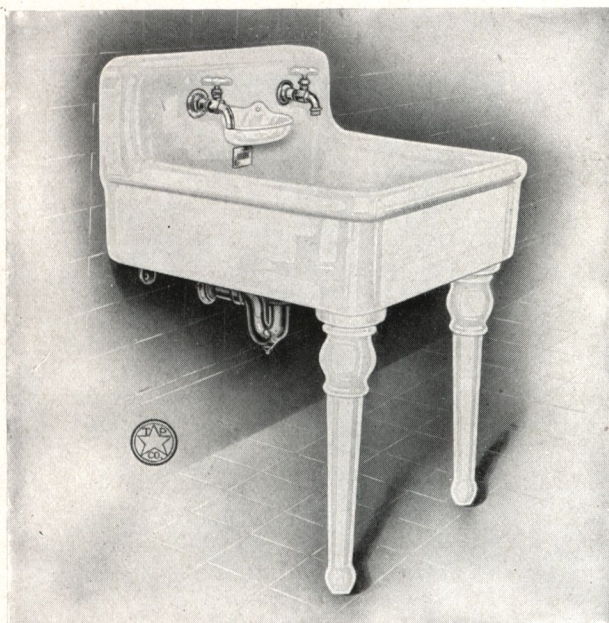


Plate 8750

The Strand Solid Porcelain Extra Wide Kitchen Sink with Integral Back, on Porcelain Legs and Iron Wall Clamps, China Soap Cup, Nickel-plated China Cross Handle Compression Faucets, Overflow Grid, Waste Plug and Coupling and 2-inch Half S Trap to wall.

Size of Sink, inches.....	27 x 26	30 x 26
Height of Back, inches.....	8	10½
Depth Inside, inches.....	7½	7½
Price, Integral Back Sink only, Class A.....	31.00	36.25
Price, Integral Back Sink only, Class B.....	22.50	25.75
Price, Integral Back Sink only, Buff Ware.....	20.25	23.25
Porcelain Legs and Iron Wall Clamps, per pair.....		9.50
Buff Ware Legs and Iron Wall Clamps, per pair.....		6.50
White Enamel Painted Iron Legs and Wall Clamps, per pair.....		2.50
Bronzed Iron Legs and Wall Clamps, per pair.....		2.50
Nickel-plated Waste Plug and Coupling.....		1.70
Nickel-plated Overflow Grid.....		1.70
Nickel-plated ⅝-inch China Handle Compression Faucets, per pair.....		5.00
Nickel-plated 2-inch Half S Trap.....		5.00
White China Soap Cup.....		1.00
Buff Ware Soap Cup.....		1.00

Nason Porcelain Kitchen Sink



Plate 8760

The Vernon Solid Porcelain Three-Quarter Roll Rim Kitchen Sink with Separate Back, on Porcelain Legs and Iron Wall Clamps, Nickel-plated Compression Faucets with China Index Handles, Waste Strainer and Coupling and 1½-inch Half S Trap to wall.

Size of Sink, inches.....	24 x 17	30 x 20	36 x 23	42 x 24	48 x 24
Height of Back, inches.....	15	15	15	18	18
Depth Inside, inches.....	6	7	7	7	7
Price, Sink only, Class A.....	12.50	15.50	17.50	24.00	30.00
Price, Sink only, Class B.....	7.75	10.75	13.50	17.25	21.50
Price, Sink only, Buff Ware.....	7.60	10.75	13.25	16.50	20.50
Price, Back only, Class A.....	6.00	7.75	8.75	11.00	13.00
Price, Back only, Class B.....	4.50	5.75	7.25	8.00	9.25
Price, Back only, Buff Ware.....	3.75	4.75	5.75	6.75	8.50
Porcelain Legs and Iron Wall Clamps, per pair.....					9.50
Buff Ware Legs and Iron Wall Clamps, per pair.....					6.50
White Enamel Painted Iron Legs and Wall Clamps, per pair.....					2.50
Bronzed Iron Legs and Wall Clamps, per pair.....					2.50
Nickel-plated Waste Strainer and Coupling.....					1.70
Nickel-plated 1½-inch Half S Trap.....					3.25
Nickel-plated 5/8-inch Compression Index Faucets, per pair.....					2.50

Nason Porcelain Enameled Iron Kitchen Sink

Monarch

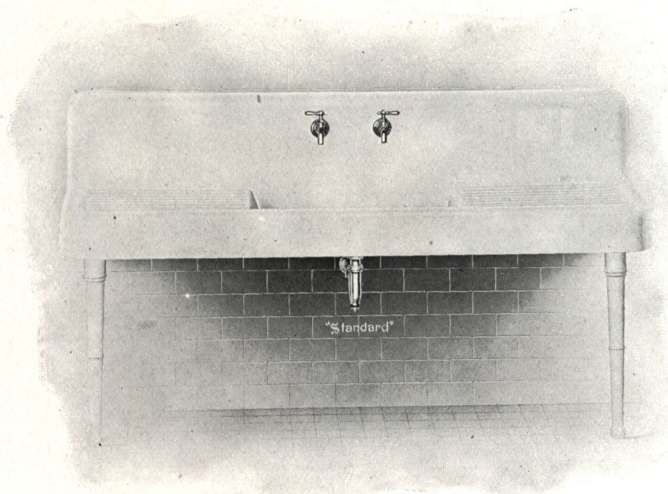


Plate 8770

The Monarch Porcelain Enameled Iron One-piece Sink with Apron, Right and Left-hand Drain Boards, 12-inch Back, supported on Adjustable Painted Iron Legs and Concealed Wall Hanger, with Nickel-plated Waste Strainer, Quick Opening Compression Faucets, and 1½-inch Half S Trap.

Dimensions

No.....	1	2
Size, inches.....	30 x 20	36 x 22
Sink, inches.....	26¼ x 20¼	32 x 22
Drain Boards, inches.....	24 x 20¼	23 x 22
Apron, inches.....	5½	6
Length over all, inches.....	74¼	78
Width over all, inches.....	20¼	22

Prices

No. 1, as described.....	88.50
No. 1, less all Fittings except Strainer.....	80.75
No. 2, as described.....	95.00
No. 2, less all Fittings except Strainer.....	86.75

Nason Porcelain Enameled Iron Kitchen Sinks

Plate 8780

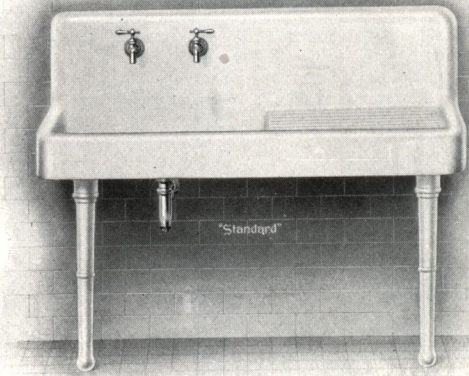


Plate 8780. Belmont

The Belmont Porcelain Enameled Iron One-piece Sink with Apron, Right-hand Drain Board, 12-inch Back, supported on Adjustable Painted Iron Legs and Concealed Wall Hanger, with Nickel-plated Waste Strainer, Quick-opening Compression Faucets, and 1½-inch Half S Trap.

Dimensions

No.....	1	2	3
Sink, inches.....	24 x 20	30 x 20	36 x 22
Drain Board, inches....	20 x 20	24 x 20	26 x 22
Length over all, inches..	42½	52½	60½
Width over all, inches..	20	20¼	22

Prices

No. 1, as described, but with Concealed Hanger.....	37.50
No. 1, less all Fittings except Strainer.....	30.75
No. 2, as described.....	58.25
No. 2, less all Fittings except Strainer.....	48.75
No. 3, as described.....	70.00
No. 3, less all Fittings except Strainer.....	61.75

Legs furnished allow Rim of Sink to be adjusted from 30 to 32 inches from floor.

Plate 8781

The Ansonia Porcelain Enamelled Iron One-piece All Roll Rim Sink with Apron, supported on Porcelain Enameled Iron Adjustable Legs with Wall Braces, Nickel-plated Waste Strainer, Quick Opening Compression Faucets with China Handles, 1½-inch Half S Trap, Two 30-inch Long Ash Drain Boards with Nickel-plated Hinges and Telescopic Leg.

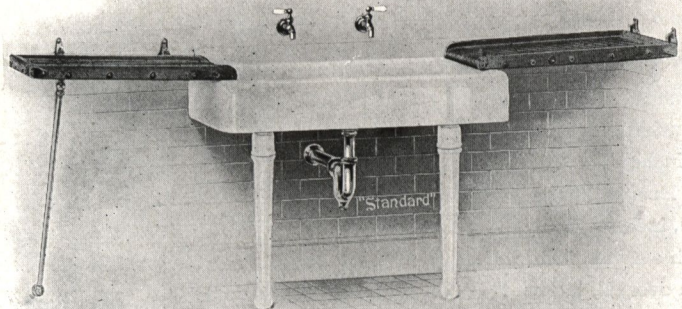


Plate 8781. Ansonia

Size Sink, inches.....	42 x 24
Price, as described.....	84.00
Price, less Faucets and Trap.....	74.00
Length over all, inches.....	102

Nason Porcelain Enameled Iron Kitchen Sinks

Plate 8790

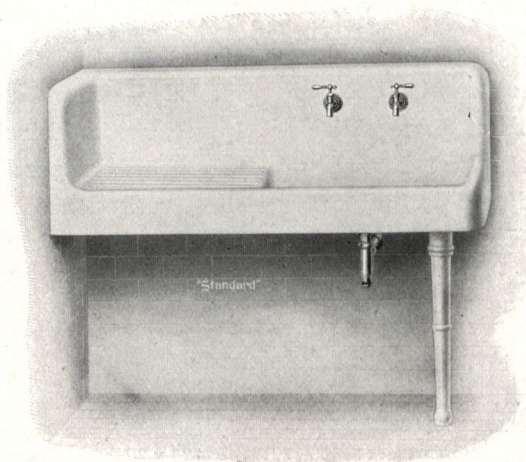


Plate 8790. Standish

The Standish Porcelain Enameled Iron One-piece Sink for Corner, with Left-hand Drain Board, Apron and 12-inch Back and End, supported on Adjustable Painted Iron Leg and Concealed Wall Hangers, Nickel-plated Waste Strainer, Quick Opening Compression Faucets, and 1½-inch Half S Trap.

Dimensions

No.	1	2
Sink, inches	30 x 20	36 x 22
Drain Board, inches	24 x 20	26 x 22
Length over all, inches	52½	60½
Width over all, inches	20¼	22

Prices

No. 1, as described	59.00
No. 1, less all Fittings except Strainer	50.50
No. 2, as described	69.00
No. 2, less all Fittings except Strainer	60.50

This Sink can be furnished for Right-hand Corner, with Right or Left-hand Drain Board.

Plate 8791

The Windsor Porcelain Enameled Iron One-piece Sink for Corner, with Right-hand Drain Board, Apron and 12-inch Back and End, supported on Adjustable Painted Iron Leg and Concealed Wall Hangers, Nickel-plated Waste Strainer, Quick Opening Compression Faucets, and 1½-inch Half S Trap.

Dimensions

No.	1	2
Sink, inches	30 x 20	36 x 22
Drain Board, inches	24 x 20	26 x 22
Length over all, inches	52½	60½
Width over all, inches	20¼	22

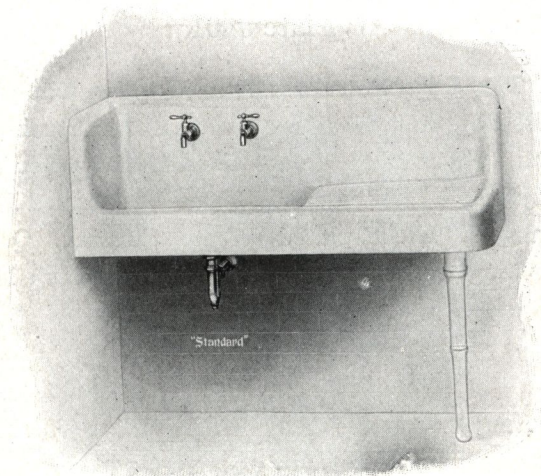


Plate 8791. Windsor

Prices

No. 1, as described	59.50
No. 1, less all Fittings except Strainer	51.00
No. 2, as described	71.25
No. 2, less all Fittings except Strainer	63.00

This Sink can be furnished for Right-hand Corner with Right or Left-hand Drain Board.

Nason Porcelain Enameled Iron Kitchen Sinks

Plate 8800

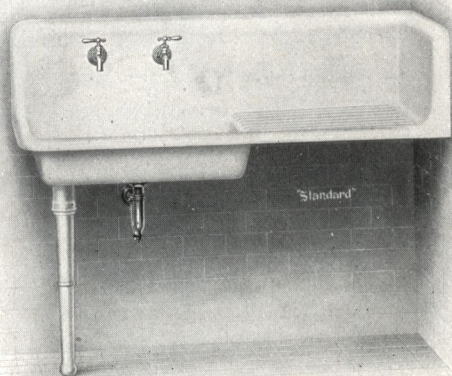


Plate 8800. Argyle

The Argyle Porcelain Enameled Iron One-piece Roll Rim Sink for Corner, with 12-inch Back and End, Right-hand Drain Board, supported on Adjustable Painted Iron Leg, and Concealed Wall Hanger, Nickel-plated Waste Strainer, Quick Opening Compression Faucets, and 1½-inch Half S Trap.

Dimensions

No.	1	2
Sink, inches	30 x 20	36 x 22
Drain Board, inches	24 x 20	26 x 22
Length over all, inches	52½	60
Width over all, inches	20¼	22

Prices

No.	1	2
As described	44.00	55.50
Less all Fittings except Strainer	35.50	48.00

This Sink can be furnished for Left-hand Corner with Right or Left-hand Drain Board.

Plate 8801

The Arion Porcelain Enameled Iron One-piece Roll Rim Sink for Corner, with 12-inch Back and End, Right-hand Drain Board, supported on Adjustable Painted Iron Leg, and Concealed Wall Hangers, Nickel-plated Waste Strainer, Quick Opening Compression Faucets and 1½-inch Half S Trap.

Dimensions

No.	1	2
Sink, inches	30 x 20	36 x 22
Drain Board, inches	24 x 20	26 x 22
Length over all, inches	52½	60
Width over all, inches	20¼	22

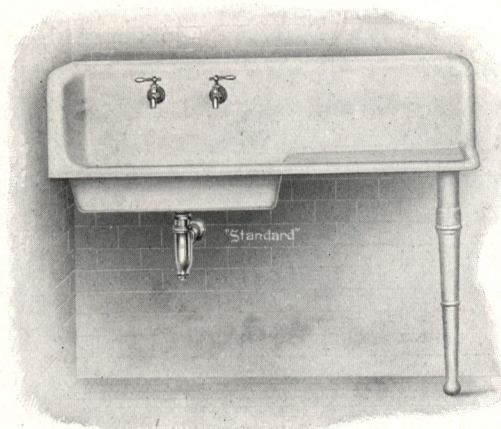


Plate 8801. Arion

Prices

No.	1	2
As described	44.00	55.50
Less all Fittings except Strainer	35.50	48.00

This Sink can be furnished for Right-hand Corner with Right or Left-hand Drain Board.

Nason Porcelain Enameled Iron Kitchen Sinks

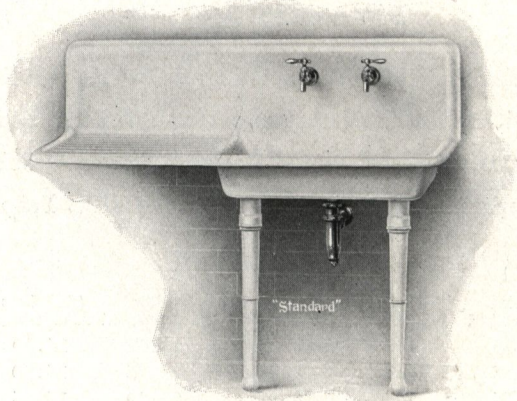


Plate 8810. Bancroft

Plate 8810

The Bancroft Porcelain Enameled Iron One-piece Roll Rim Sink, with 12-inch Back and Left-hand Drain Board, supported on Adjustable Painted Iron Legs and Concealed Wall Hangers, Nickel-plated Waste Strainer, Quick Opening Compression Faucets, and 1½-inch Half S Trap.

Dimensions

No.	1	2	3
Sink, inches	30 x 20	30 x 20	36 x 22
Drain Board, inches	20 x 18	20 x 24	22 x 26
Length over all, inches	46	52½	60
Width over all, inches	20	20¼	22

Prices

No.	1	2	3
As described	36.25	38.50	50.25
Less all Fittings except Strainer	28.00	30.25	42.00

This Sink can be furnished with Drain Board on Right-hand side if so desired.

Plate 8811

The Bremen Porcelain Enameled Iron One-piece Roll Rim Sink for Left-hand Corner, with 12-inch Back and End, supported on Concealed Wall Hangers and Adjustable Painted Iron Leg, Nickel-plated Waste Strainer, Quick Opening Compression Faucets and 1½-inch Half S Trap.

This Sink can be furnished for Right-hand Corner if so desired

Prices

Sizes Inches	Sink as Described	Sink Less All Fittings
24 x 16	26.00	17.75
24 x 18	26.70	18.50
30 x 18	28.50	20.25
36 x 18	31.00	22.75
30 x 20	29.50	21.25
36 x 20	30.50	22.25
40 x 20	35.50	27.00
36 x 22	34.00	25.50
42 x 22	37.25	28.75

If without Adjustable Leg, deduct 1.00.

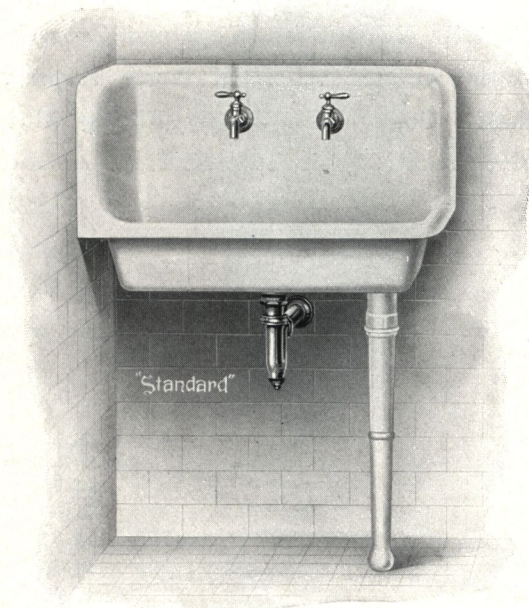


Plate 8811. Bremen

Nason Porcelain Enameled Iron Kitchen Sinks

Plate 8820



Plate 8820. Popular

If with Painted Adjustable Legs, add per pair 2.00

The Popular Porcelain Enameled Iron One-piece Roll Rim Sink, with 12-inch Back, supported on Concealed Wall Hanger, with Nickel-plated Waste Strainer, Quick Opening Compression Faucets and 1½-inch Half S Trap.

Prices—6 Inches Deep

Sizes Inches	Sink as Described	Sink Less All Fittings	Sizes Inches	Sink as Described	Sink Less All Fittings
20 x 20	19.50	11.25	30 x 22	23.25	15.00
24 x 16	18.75	10.50	36 x 18	23.25	15.00
24 x 18	17.75	9.25	36 x 20	24.00	15.75
24 x 20	20.50	12.25	36 x 22	25.50	17.25
30 x 18	20.00	11.75	40 x 20	27.25	18.75
30 x 20	20.75	12.50	42 x 22	28.75	20.50

8 Inches Deep

Size, inches.....	24 x 20	30 x 22	36 x 22
Sink only, less all Fittings.....	14.50	17.75	20.25

Plate 8821

The Brooklyn Porcelain Enameled Iron One-piece Roll Rim Sink, with 12-inch Back, supported on Adjustable Painted Iron Legs and Concealed Wall Hanger, with Nickel-plated Waste Strainer, Combination Compression Supply Fitting with China Index Handles, 1½-inch Half S Trap.



Plate 8821. Brooklyn

Prices

Size Inches	Sink as Described	Sink Less all Fittings	Sizes Inches	Sink as Described	Sink Less all Fittings
24 x 16	23.75	12.50	36 x 18	28.50	17.00
24 x 18	22.75	11.50	36 x 20	29.00	17.75
30 x 18	25.00	13.75	36 x 22	30.50	19.25
30 x 20	25.75	14.50	40 x 20	32.25	21.00
30 x 22	28.50	17.00	42 x 22	33.50	23.50

If without Adjustable Painted Legs, deduct per pair 2.00

Nason Porcelain Enameled Iron Kitchen Sink

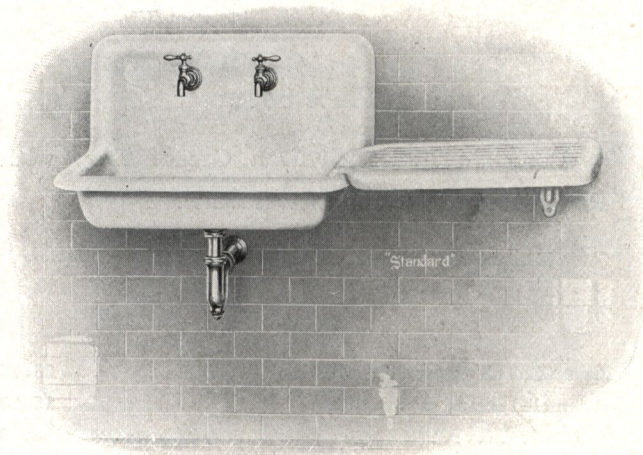


Plate 8830

The Arthur Porcelain Enameled Iron One-piece Roll Rim Sink, with 12-inch Back, supported on Concealed Wall Hanger 24 inches long, Porcelain Enameled Iron Interchangeable Drain Board on Painted Bracket, with Nickel-plated Waste Strainer, Quick Opening Compression Faucets with Solid Handles, and 1½-inch Half S Trap.

Plate 8830. Arthur

Prices

Sizes Inches	Complete as Described	Sink and Drain Board Less all Fittings	Sizes Inches	Complete as Described	Sink and Drain Board Less all Fittings
20 x 20	25.25	17.00	30 x 22	30.25	22.00
24 x 16	24.50	16.00	36 x 18	29.50	21.00
24 x 18	25.00	16.75	36 x 20	30.50	22.25
24 x 20	26.25	18.00	36 x 22	32.40	24.00
30 x 18	26.00	18.50	40 x 20	33.75	25.50
30 x 20	27.00	19.75	42 x 22	35.75	27.50

If with Painted Adjustable Legs, add per pair 2.00

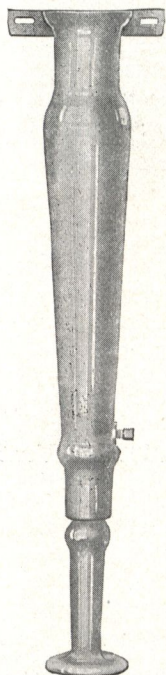


Plate 8831

Plate 8831

Adjustable Sink Legs furnished with all Porcelain Enameled Iron Sinks shown or ordered with Legs. This new style Leg has an adjustment of 6 inches, which makes it possible to set the Sink any height varying from 30 to 36 inches from floor to top of rim. Also made for Drain Boards.

When ordered separately, the following prices will apply:

	Painted	Enameled
Style A For Sinks, each	1.00	2.75
Style B For Drain Boards, each	1.50	3.10

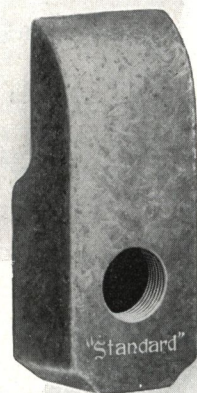


Plate 8832

Concealed Galvanized Iron Air Chambers for Roll Rim Sinks.

Per pair 2.00

Nason Grease Traps

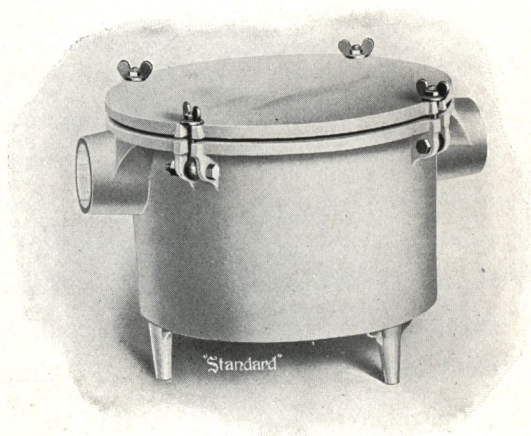


Plate 8840

Plate 8840

Porcelain Enameled Iron Grease Trap with Removable Cover and Swivel Bolts.

Diameter, 17 inches. Height, 13 inches.

Prices

Enameled all over as described	23.75
Enameled inside as described	16.00
Painted	10.00

Plate 8841

Porcelain Enameled Iron Water Jacket Grease Trap with Removable Cover and Swivel Bolts, with 2-inch Polished Brass Inlet, Outlet and Vent Connection, 1 $\frac{1}{4}$ -inch Inlet and Outlet Openings to Chilling Chamber.

Diameter, 18 $\frac{3}{4}$ inches. Height, 17 inches.

Prices

Enameled all over as described	75.00
Enameled inside, with Spuds only	39.00

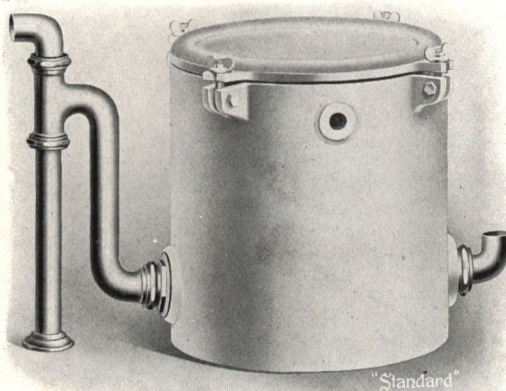


Plate 8841

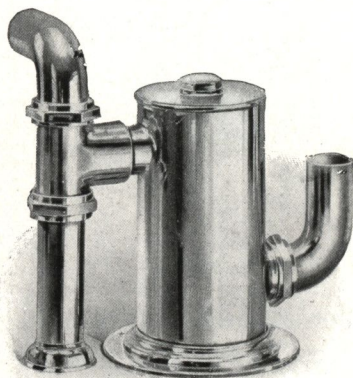


Plate 8842

Plate 8842

Brass Grease Trap, fitted with 2-inch Inlet, Outlet and Vent Connection and Removable Top.

Diameter, 5 inches. Height, 10 inches.

Prices

As described, Nickel-plated	28.50
As described, Polished Brass	26.75

Nason Drain Boards

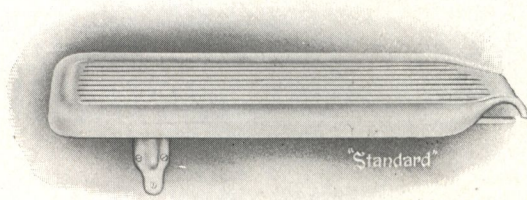


Plate 8850

Plate 8850

Porcelain Enameled Iron Interchangeable Drain Board with Painted Iron Wall Bracket.

Width, inches.....	16	18	20	22
18 inches long.....	4.30	4.80	5.00	5.40
24 inches long.....	5.00	5.40	5.75	6.10

Plate 8851

Interchangeable Hardwood Drain Board, with Porcelain Enameled Iron End, to fit over Roll Rim of Sink.

Width, inches.....	18	20	22
18 inches long.....	3.25	3.60	4.00
24 inches long.....	4.00	4.30	4.70
30 inches long.....	5.00	5.35	5.75

Painted Iron Bracket, extra each 1.00

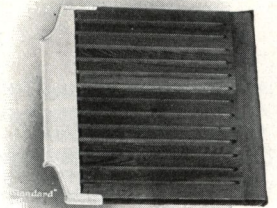


Plate 8851

Plate 8852

Interchangeable Hardwood Drain Board for Roll or Flat Rim Sinks.



Plate 8852

Width Inches	Length Inches	Price	Width Inches	Length Inches	Price
18	18	2.50	20	24	3.35
18	20	2.70	20	30	4.20
18	22	2.90	20	36	4.80
18	24	3.05	22	18	3.05
18	30	3.90	22	24	3.75
18	36	4.50	22	30	4.50
20	18	2.75	22	36	5.00

Painted Iron Bracket, extra 1.00

Plate 8853

Hardwood Drain Board, covered with White Metal.

Size 18 x 24 inches.....	14.00
Size 18 x 30 inches.....	14.50
Size 18 x 36 inches.....	15.00
Size 20 x 24 inches.....	15.50
Size 20 x 36 inches.....	17.50
Size 22 x 24 inches.....	16.00
Size 22 x 30 inches.....	17.00

Special size and shapes made to order.
Price includes Bracket.

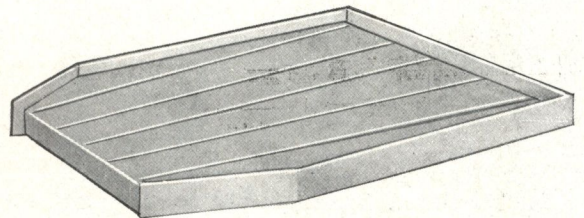


Plate 8853

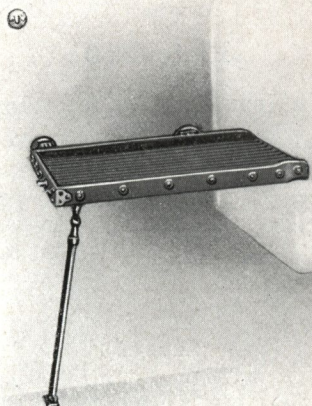


Plate 8860

Heavy Oak Folding Drain Board with Brass Reinforcing Rods, Raised Edges, Nickel-plated Hinges, Telescopic Leg and Wall Catch.

30 inches long to fit Solid Porcelain Sinks.

Complete..... 15.00

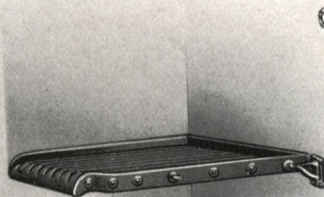


Plate 8861

Heavy Oak Folding Drain Board with Brass Reinforcing Rods, Raised Edges, Nickel-plated End Hinges and Wall Catch for End Wall.

30 inches long to fit Solid Porcelain Sinks.

Complete..... 12.00



Plate 8862

Heavy Ash Wringer Base and Anchor Rod for Solid Porcelain Laundry Trays.

Each..... 5.00

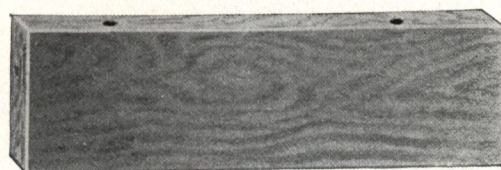


Plate 8863

Oak Wringer Strip for Wash Trays with Ash Frame.

Each..... 1.00

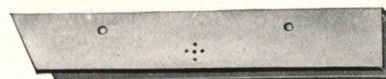


Plate 8864

Finished Brass Wringer Holder with Bolts for Soapstone or Slate Trays.

Each..... 3.00

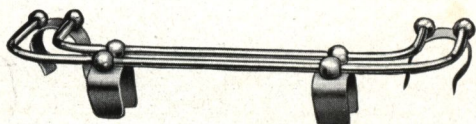


Plate 8865

Nickel-plated Spring Brass Rim Guard for Porcelain Slop Sink.

For 20-inch Sinks, each..... 10.00

Special lengths if desired.

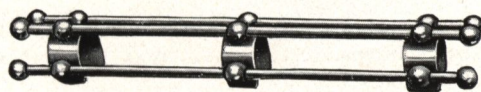


Plate 8866

Nickel-plated Spring Brass Rim Guard for Porcelain Slop Sink.

Length 15 inches, each..... 8.00

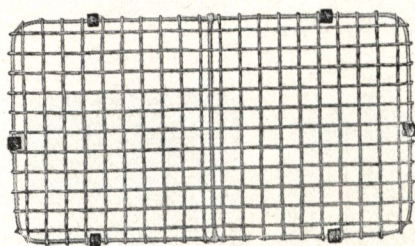


Plate 8870

Nason Sink Mats

Plate 8870

Heavy Wire Sink Mat with Rubber Bumpers, for bottom of Kitchen and Slop Sinks.

Made in Galvanized Steel and Brass Wire.

Prices

Kitchen Sink Mats

Size of Mat Inches	Size of Sink Inches	Galvanized	Brass
23 x 13	30 x 18	5.00	7.00
23 x 13	30 x 20	5.00	7.00
29 1/2 x 15	36 x 18	5.75	8.70
29 1/2 x 15	36 x 20	5.75	8.70
29 1/2 x 15	36 x 22	5.75	8.70
33 1/2 x 15 1/2	42 x 24	6.00	10.00

Slop Sink Mats

Size of Sink Inches	Galvanized	Brass
20 x 16	4.50	6.00
22 x 18	4.50	6.00
22 x 20	4.75	6.50
24 x 20	4.75	6.50

Plate 8871

Hardwood Sink Mat with Rounded Ends and Rattan Cross Pieces.

Mat for 18 x 24-inch Enamel Iron Sink, each.....	.70
Mat for 18 x 30-inch Enamel Iron Sink, each.....	.96
Mat for 18 x 36-inch Enamel Iron Sink, each.....	1.17
Mat for 20 x 24-inch Enamel Iron Sink, each.....	.80
Mat for 20 x 30-inch Enamel Iron Sink, each.....	1.05
Mat for 20 x 36-inch Enamel Iron Sink, each.....	1.27
Mat for 22 x 36-inch Enamel Iron Sink, each.....	1.45
Mat for 22 x 42-inch Enamel Iron Sink, each.....	1.80
Mat for 22 x 30-inch Solid Porcelain Sink, each.....	.70
Mat for 24 x 36-inch Solid Porcelain Sink, each.....	1.45
Mat for 24 x 42-inch Solid Porcelain Sink, each.....	1.80
Mat for 24 x 48-inch Solid Porcelain Sink, each.....	2.00

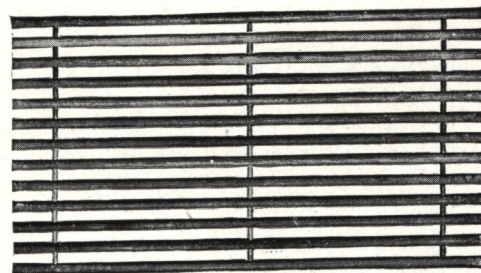


Plate 8871

Plate 8872

Hardwood Sink Mat and Rim Protector, with Rounded Ends and Rattan Cross Pieces.

Mat for 18 x 24-inch Enamel Iron Sink, each.....	1.80
Mat for 18 x 30-inch Enamel Iron Sink, each.....	2.40
Mat for 18 x 36-inch Enamel Iron Sink, each.....	3.00
Mat for 20 x 24-inch Enamel Iron Sink, each.....	2.00
Mat for 20 x 30-inch Enamel Iron Sink, each.....	2.15
Mat for 20 x 36-inch Enamel Iron Sink, each.....	3.20
Mat for 22 x 36-inch Enamel Iron Sink, each.....	3.45
Mat for 22 x 42-inch Enamel Iron Sink, each.....	4.20
Mat for 22 x 24-inch Solid Porcelain Sink, each.....	1.80
Mat for 24 x 30-inch Solid Porcelain Sink, each.....	2.15
Mat for 24 x 36-inch Solid Porcelain Sink, each.....	3.50
Mat for 24 x 42-inch Solid Porcelain Sink, each.....	4.40
Mat for 24 x 48-inch Solid Porcelain Sink, each.....	5.20

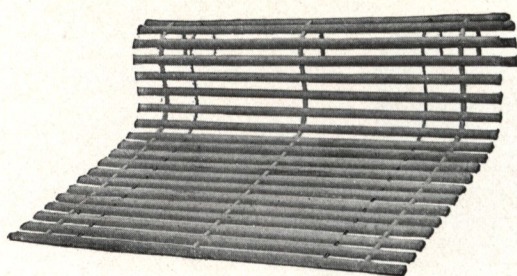


Plate 8872

Plate 8873

Hardwood Sink Rim Guard made to fit either Solid Porcelain or Enameled Iron Sinks.

For Sink 20 inches long, each.....	.75
For Sink 22 inches long, each.....	.85
For Sink 24 inches long, each.....	.95
For Sink 30 inches long, each.....	1.25
For Sink 36 inches long, each.....	1.55
For Sink 42 inches long, each.....	1.85

Cut No. 18 is for Enameled Iron Roll Rim Sink. Cut No. 19 for Porcelain Sinks and Enamel Sinks with Aprons.

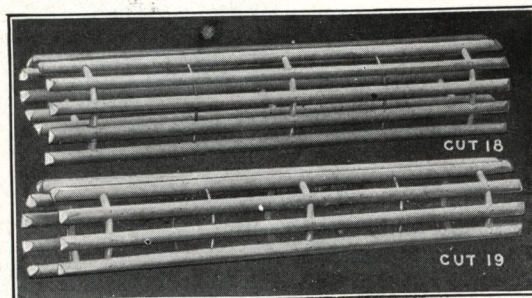


Plate 8873

Nason Rubber Drain Board and Sink Mats

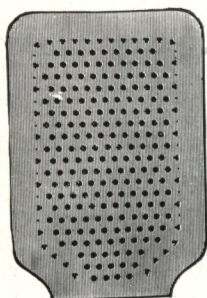


Plate 8880

White Perforated
Rubber Drain
Board Mat

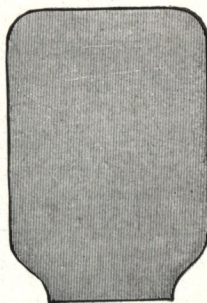


Plate 8881

White Plain Rubber
Drain Board
Mat

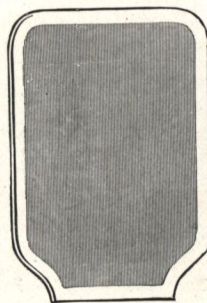


Plate 8882

White Moulded
Rubber Drain
Board Mat

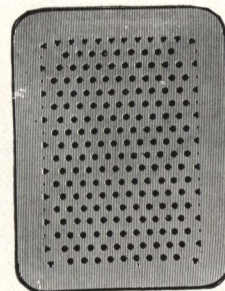


Plate 8883

White Perforated
Rubber Drain Board Mat
with Round Corners

Price List—Plate 8880—1, 2, 3

To fit Drain Board 18 x 18 inches, each.....	1.75
To fit Drain Board 20 x 18 inches, each.....	2.00
To fit Drain Board 22 x 18 inches, each.....	2.25
To fit Drain Board 18 x 24 inches, each.....	2.20
To fit Drain Board 20 x 24 inches, each.....	2.75
To fit Drain Board 22 x 24 inches, each.....	3.00

Note: When ordering always give size of Drain Board and Plate Number of style Mat wanted.
Besides shapes shown, we make other shapes to fit every style of drain board.

Rubber Sink Mats

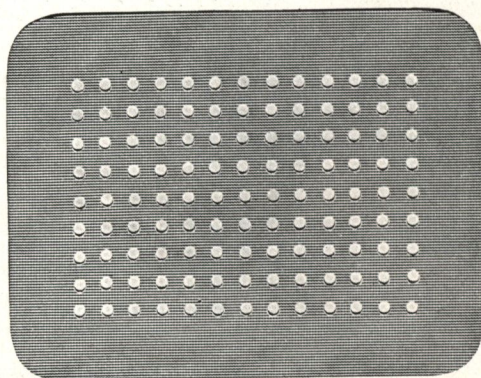


Plate 8884

White Rubber Perforated Sink Mat

Price List

To fit 18 x 24-inch Sink, each.....	1.35	To fit 20 x 36-inch Sink, each.....	2.55
To fit 18 x 30-inch Sink, each.....	1.92	To fit 22 x 30-inch Sink, each.....	1.85
To fit 20 x 30-inch Sink, each.....	2.10	To fit 22 x 36-inch Sink, each.....	2.95
To fit 18 x 36-inch Sink, each.....	2.35	To fit 24 x 36-inch Sink, each.....	2.95

When ordering always give size and style of sink.

Nason Porcelain Enameled Iron Sinks and Roll Rim Backs

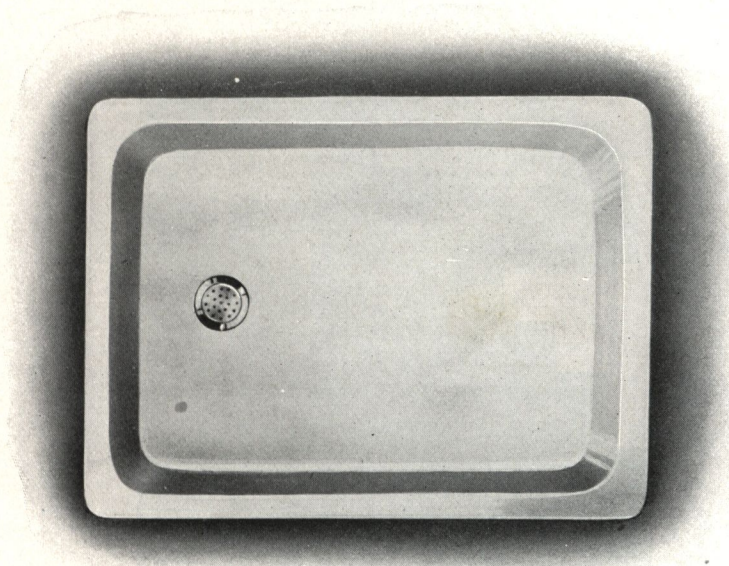


Plate 8890

Nason Porcelain Enameled Iron Flat Rim Kitchen Sink with Nickel-plated Perfecto Strainer and Tail Piece

Size Inches	Enameled as Described	Size Inches	Enameled as Described	Size Inches	Enameled as Described	Size Inches	Enameled as Described
12 x 12	3.80	16 x 20	5.25	20 x 20	5.65	20 x 60	36.45
12 x 16	3.95	16 x 24	5.35	20 x 24	6.10	20 x 72	47.75
12 x 18	4.15	16 x 28	6.10	20 x 28	6.45	22 x 36	8.85
12 x 20	4.50	16 x 30	6.30	20 x 30	6.10	22 x 42	11.80
14 x 14	4.25	.....	....	20 x 36	8.50	22 x 48	14.10
14 x 20	5.00	18 x 24	5.75	20 x 38	8.85	22 x 62	43.50
14 x 22	5.15	18 x 30	5.55	20 x 40	11.10	24 x 48	14.50
14 x 24	5.25	18 x 32	7.40	20 x 42	11.50	24 x 50	16.75
16 x 16	4.70	18 x 36	7.75	20 x 48	12.60	24 x 60	43.50
.....	.....	.....	.....	.....	.....	24 x 72	50.50

For Patent Overflow and Plug Strainer, all sizes, add 2.00

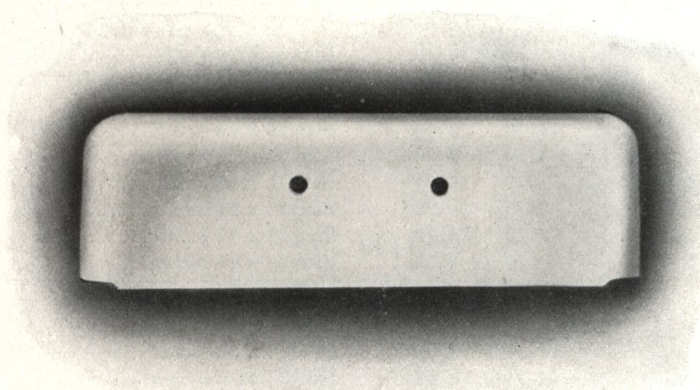


Plate 8891

Porcelain Enameled Iron 12-inch Roll Rim Sink Back

Length, inches.....	16	18	20	22	24	28	30	32
Price, as described.....	2.30	2.55	2.75	3.05	3.50	4.00	3.60	4.60
Length, inches.....	36	40	42	48	50	60	62	72
Price, as described.....	6.90	5.85	6.10	7.65	8.00	9.50	9.85	13.00

Cast Iron Sinks

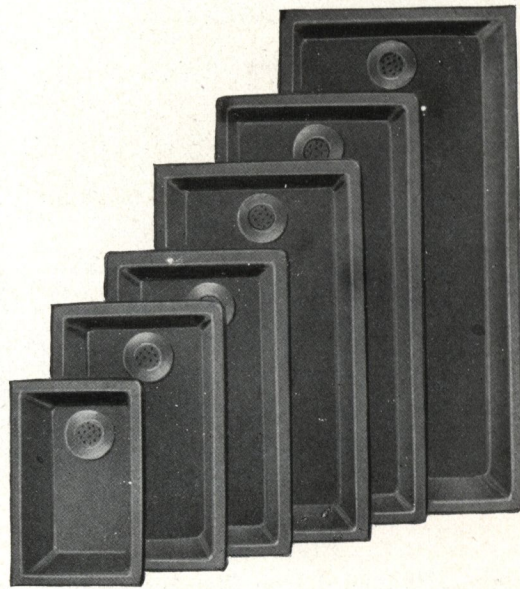


Plate 8900

	Plain	Galvanized		Plain	Galvanized
Size 12 x 12 inches.....	1.10	2.20	Size 18 x 36 inches.....	3.25	6.50
Size 12 x 16 inches.....	1.20	2.30	Size 18 x 40 inches.....	3.75	7.50
Size 12 x 18 inches.....	1.25	2.60	Size 18 x 42 inches.....	4.25	9.00
Size 12 x 20 inches.....	1.50	3.10	Size 20 x 20 inches.....	1.95	4.20
Size 14 x 14 inches.....	1.35	2.70	Size 20 x 24 inches.....	2.40	5.00
Size 14 x 20 inches.....	1.50	3.20	Size 20 x 28 inches.....	2.70	5.50
Size 14 x 22 inches.....	1.60	3.30	Size 20 x 30 inches.....	3.00	6.25
Size 14 x 24 inches.....	1.70	3.75	Size 20 x 32 inches.....	3.25	6.50
Size 14 x 26 inches.....	1.80	4.00	Size 20 x 36 inches.....	3.70	7.75
Size 15 x 23 inches.....	1.70	3.40	Size 20 x 38 inches.....	3.80	8.00
Size 15 x 25 inches.....	1.85	3.70	Size 20 x 40 inches.....	4.00	8.75
Size 15 x 27 inches.....	2.00	4.25	Size 20 x 42 inches.....	4.25	9.00
Size 16 x 16 inches.....	1.60	3.25	Size 20 x 48 inches.....	5.30	11.50
Size 16 x 20 inches.....	1.70	3.50	Size 20 x 60 inches.....	10.00	21.00
Size 16 x 24 inches.....	1.90	4.00	Size 20 x 72 inches.....	13.00	26.00
Size 16 x 28 inches.....	2.10	4.50	Size 21 x 36 inches.....	3.70	7.75
Size 16 x 30 inches.....	2.25	4.75	Size 22 x 36 inches.....	4.00	8.25
Size 17 x 25 inches.....	2.10	4.30	Size 22 x 42 inches.....	4.75	10.00
Size 17 x 28 inches.....	2.20	4.50	Size 23 x 48 inches.....	5.75	12.25
Size 18 x 20 inches.....	2.00	4.00	Size 24 x 48 inches.....	6.00	12.25
Size 18 x 22 inches.....	2.05	4.10	Size 24 x 50 inches.....	7.50	16.00
Size 18 x 24 inches.....	2.10	4.30	Size 24 x 60 inches.....	12.00	25.00
Size 18 x 26 inches.....	2.25	4.60	Size 24 x 72 inches.....	15.00	31.00
Size 18 x 28 inches.....	2.35	4.80	Size 24 x 84 inches.....	20.00	40.00
Size 18 x 30 inches.....	2.50	5.10	Size 24 x 96 inches.....	28.00	56.00
Size 18 x 32 inches.....	3.00	6.25	Size 24 x 108 inches.....	32.00	64.00
Size 18 x 34 inches.....	3.00	6.25	Size 24 x 120 inches.....	36.00	72.00

All of the above Sinks 6 inches deep.

Add for Patent Overflow.....	1.00
Add for Patent Overflow and Plug Strainer.....	1.25

Cast Iron Sink Backs

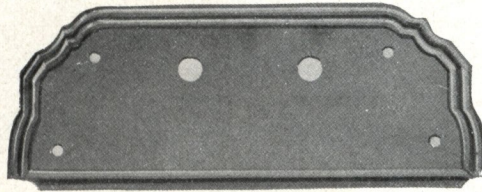


Plate 8910

Plain Sink Back

	Plain	Galvanized		Plain	Galvanized
Size, 12-inch.....	1.00	1.65	Size, 27-inch.....	1.70	3.25
Size, 14-inch.....	1.05	1.75	Size, 28-inch.....	1.80	3.50
Size, 15-inch.....	1.10	2.00	Size, 30-inch.....	2.00	4.00
Size, 16-inch.....	1.10	2.00	Size, 32-inch.....	2.25	4.25
Size, 18-inch.....	1.20	2.10	Size, 34-inch.....	2.50	4.75
Size, 20-inch.....	1.25	2.25	Size, 36-inch.....	2.75	5.00
Size, 22-inch.....	1.35	2.50	Size, 38-inch.....	3.00	5.50
Size, 23-inch.....	1.40	2.70	Size, 41-inch.....	3.50	6.00
Size, 24-inch.....	1.50	2.80	Size, 42-inch.....	3.75	6.50
Size, 25-inch.....	1.55	2.90	Size, 48-inch.....	4.25	7.00

Sink Backs with Air Chambers, add to the list of Plain Backs for each Air Chamber: Plain, 1.50; Galvanized, 2.00.

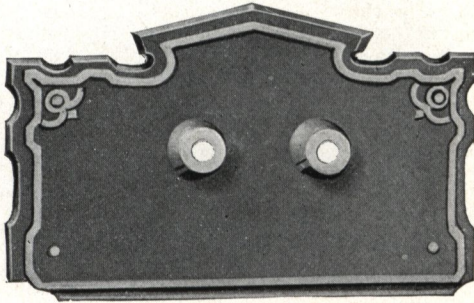


Plate 8911

Centennial Sink Back

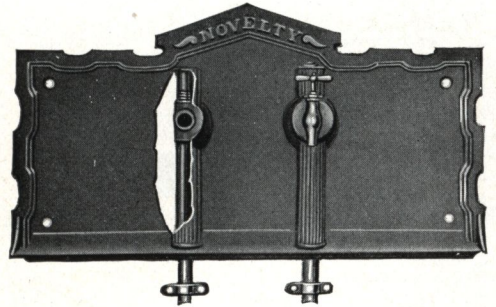


Plate 8912

Novelty Sink Back

Plate 8911-12

	Plain		Galvanized			Plain		Galvanized	
	1-Hole	2-Hole	1-Hole	2-Hole		1-Hole	2-Hole	1-Hole	2-Hole
Size, 12-inch.....	1.00	1.25	1.65	1.90	Size, 27-inch.....	1.70	1.95	3.25	3.50
Size, 14-inch.....	1.05	1.30	1.75	2.00	Size, 28-inch.....	1.80	2.05	3.50	3.75
Size, 15-inch.....	1.10	1.35	2.00	2.25	Size, 30-inch.....	2.00	2.25	4.00	4.25
Size, 16-inch.....	1.10	1.35	2.00	2.25	Size, 32-inch.....	2.25	2.50	4.25	4.50
Size, 18-inch.....	1.20	1.45	2.10	2.35	Size, 34-inch.....	2.50	2.75	4.75	5.00
Size, 20-inch.....	1.25	1.50	2.25	2.50	Size, 36-inch.....	2.75	3.00	5.00	5.25
Size, 22-inch.....	1.35	1.60	2.50	2.75	Size, 38-inch.....	3.00	3.25	5.50	5.75
Size, 23-inch.....	1.40	1.65	2.70	2.95	Size, 41-inch.....	3.50	3.75	6.00	6.25
Size, 24-inch.....	1.50	1.75	2.80	3.05	Size, 42-inch.....	3.75	4.00	6.50	6.75
Size, 25-inch.....	1.55	1.80	2.90	3.15	Size, 48-inch.....	4.25	4.50	7.00	7.25

Wrought Steel Kitchen Sinks

Cast Iron Couplings for Lead Pipe



Plate 8920



Plate 8921

Flat Rim with Open Strainer—Plate 8920

No.	1	1½	2	2½	3	4	5	6
Width, inches	16	18	18	20	18	20	20	20
Length, inches	24	24	30	20	36	30	36	40
Depth, inches	6	6	6	6	6	6	6	6
Painted inside and outside, each	2.00	2.25	2.50	2.50	3.25	3.00	3.75	4.50
Galvanized inside and outside, each	2.50	2.75	3.25	3.25	4.00	3.75	4.50	5.25
Blue Enameled inside and outside, each	3.50	4.00	4.50	4.50	5.50	5.25	6.25	7.25
Agate Enameled, Gray, inside and outside, each	4.50	5.00	5.50	5.50	6.50	6.25	7.25	8.25
Crystal Enameled Light Gray inside and outside, each	4.75	5.25	5.75	5.75	6.75	6.50	7.50	8.50
White Enameled, Blue outside, each	5.25	5.75	6.50	6.50	7.50	7.25	8.25	9.25

Roll Rim with Open Strainer—Plate 8921

No.	01	01½	02	02½	03	04	05	06
Width, inches	16	18	18	20	18	20	20	20
Length, inches	24	24	30	20	36	30	36	40
Depth, inches	6	6	6	6	6	6	6	6
Painted inside and outside, each	2.10	2.35	2.60	2.60	3.35	3.10	3.85	4.60
Galvanized inside and outside, each	2.60	2.85	3.35	3.35	4.10	3.85	4.60	5.35
Blue Enameled inside and outside, each	3.60	4.10	4.60	4.60	5.60	5.35	6.35	7.35
Agate Enameled, Gray, inside and outside, each	4.60	5.10	5.60	5.60	6.60	6.35	7.35	8.35
Crystal Enameled, Light Gray, each	4.85	5.35	5.85	5.85	6.85	6.60	7.60	8.60
White Enameled, Blue outside, each	5.35	5.85	6.60	6.60	7.60	7.35	8.35	9.35

Wrought Steel Pantry Sinks



Plate 8922



Plate 8923

Flat Rim with Overflow and Plug Strainer

No.	13	17
Width, inches	14	16
Length, inches	20	24
Depth, inches	6	6
Agate Enameled, Gray, inside and out, each	5.00	5.75
Crystal Enameled Light Gray, inside and out, each	5.25	6.00
White Enameled, Blue outside	6.00	6.75

Roll Rim with Overflow and Plug Strainer

No.	019	021
Width, inches	14	16
Length, inches	20	24
Depth, inches	6	6
Agate Enameled, Gray, inside and out, each	5.10	5.85
Crystal Enameled, Light Gray, inside and out, each	5.35	6.10
White Enameled, Blue outside	6.10	6.85

Wrought Steel Sink Backs

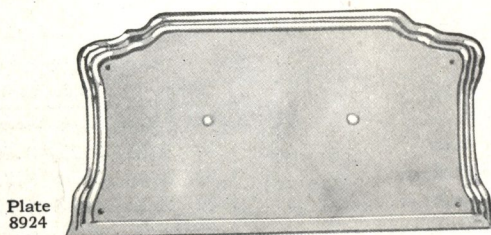


Plate 8924

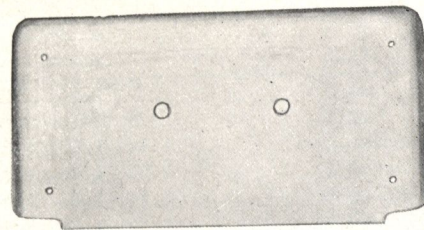


Plate 8925

No.	0	1	2	3
Width, inches	20	24	30	36
Painted, each	1.20	1.30	1.60	2.00
Galvanized, each	1.60	1.80	2.10	2.50
Blue Enameled, each	1.90	2.20	2.60	3.20
Agate Enameled, Gray, each	2.00	2.30	2.70	3.30
Crystal Enameled, Light Gray, each	2.20	2.50	2.90	3.50
White Enameled, each	2.50	3.00	3.50	4.25

No.	200	300
Width, inches	30	36
Painted, each	2.00	2.25
Galvanized, each	2.75	3.25
Blue Enameled, each	4.50	5.50
Agate Enameled, Gray, each	4.75	5.75
Crystal Enameled, Light Gray, each	5.00	6.00
White Enameled, each	5.50	6.50

Backs with two holes always supplied unless ordered with one

Soapstone Kitchen Sinks

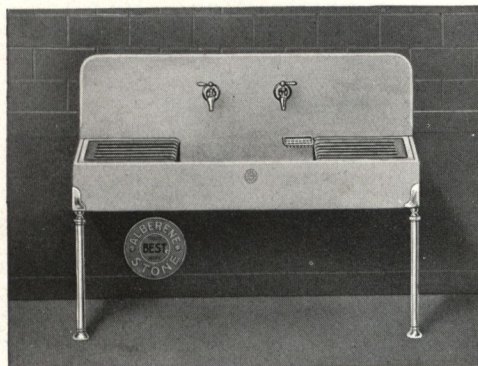


Plate 8930

Soapstone Kitchen Sink with Solid Back 16 inches high, Double Drain Boards, Polished Brass Legs and Wall Straps, Soap Cup and Open Strainer and Faucets.

As Described

Sink Inches	Drain Boards, each Inches	Depth Inches	Total Length Inches	Price	Sink Inches	Drain Boards, each Inches	Depth Inches	Total Length Inches	Price
18 x 24	18	8	60	49.50	22 x 42	18	8	78	57.75
20 x 30	18	8	66	51.75	24 x 30	18	8	66	57.00
20 x 36	18	8	72	55.50	24 x 36	18	8	72	58.25
22 x 30	18	8	66	52.75	24 x 48	18	8	84	62.75
22 x 36	18	8	72	56.25					

All measurements are outside. Cock Holes 8 inches apart.

Plate 8931

Soapstone Kitchen Sink with Solid Back 16 inches high, Single Drain Board, Polished Brass Legs and Wall Braces, Soap Cup and Open Strainer and Faucets.

As Described

Sink Inches	Drain Board Inches	Total Length Inches	Price
18 x 24	24	48	40.25
20 x 30	24	54	41.75
20 x 36	24	60	43.25
22 x 30	24	54	44.25
22 x 36	24	60	45.75
22 x 42	24	66	46.25
24 x 30	24	54	46.55
24 x 36	24	60	48.25
24 x 48	24	72	51.00

Depth, 8 inches. Cock Holes 8 inches apart.

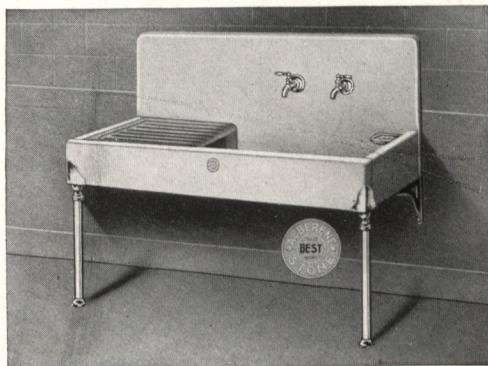


Plate 8931

Plate 8932

Soapstone Kitchen Sink with Solid Back 12 inches high, Galvanized Iron Legs and Wall Braces, Soap Cup and Open Strainer and Faucets.

As Described

Sink Inches	Depth Inches	Price
18 x 24	8	22.50
20 x 30	8	23.50
20 x 36	8	24.50
22 x 30	8	24.75
22 x 36	8	25.50
22 x 42	8	26.50
24 x 30	8	26.00
24 x 36	8	27.50
24 x 48	8	30.00

All measurements are outside. Cock Holes 8 inches apart.

Note: Any of the above Sinks can be furnished with Shelf Back and Return Ends or with End Pieces for Right or Left-hand Corner. Prices on application.

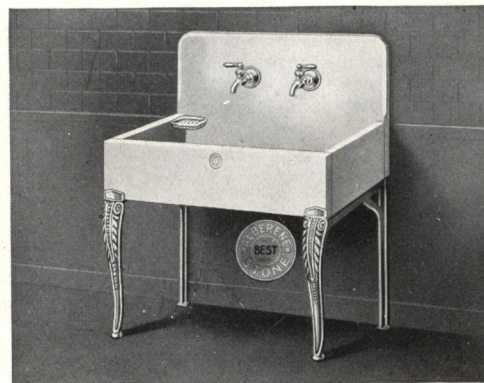


Plate 8932

Nason Scullery Sinks

Plate 8940

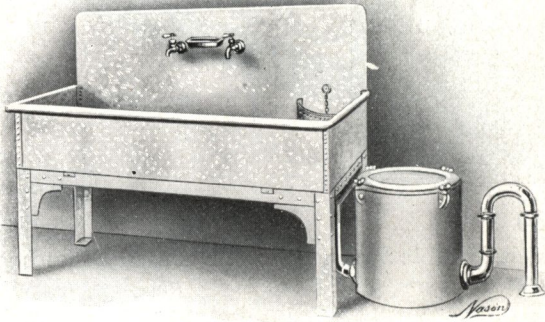


Plate 8940

The Nason No. 60B Government Galvanized Wrought Steel Roll Rim Scullery Sink with Integral Back, supported on Galvanized Steel Frame and Legs, with Perforated Corner Strainer, Brass Waste Plug with Chain and Chain Stay, Galvanized Cast Iron Soap Holder, $\frac{3}{4}$ -inch Polished Brass Fuller Box Flange Faucets and Government Cast Iron Enameled Inside Grease Trap, with Water Jacket, 2-inch I. P. Size Brass Waste Connections.

Price

As described.....	210.00
As described, less Grease Trap.....	92.00

Approximate Measurements

Length over Rim, $62\frac{1}{2}$ inches. Wall to front, 27 inches. Height of Back, 15 inches. Depth inside, 12 inches.

This Sink complies with the specifications of the U. S. Treasury, War and Navy Departments, issued under date of June, 1910.

Plate 8941

The Nason-Snelling Galvanized Wrought Steel Roll Rim Scullery Sink, with Integral Back and Dividing Partitions, supported on Galvanized Steel Frame and Legs, all Seams Riveted. Brass Waste Plugs with Chains and Twin Connections, $\frac{3}{4}$ -inch Polished Brass Fuller Flanged Faucets.

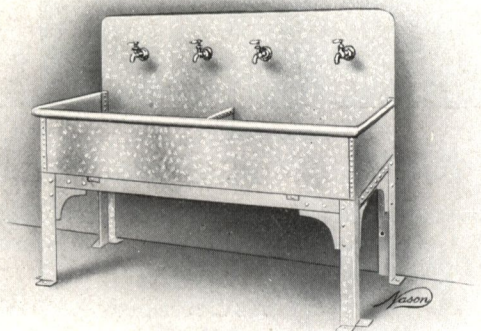


Plate 8941

Price

As described.....	100.00
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Dimensions

Length over Rim, 60 inches. Wall to Front, 24 inches. Height of Back, 15 inches. Depth inside, 12 inches.

Sinks of special sizes and styles made to order.

Nason Double Scullery Sink

The Panama

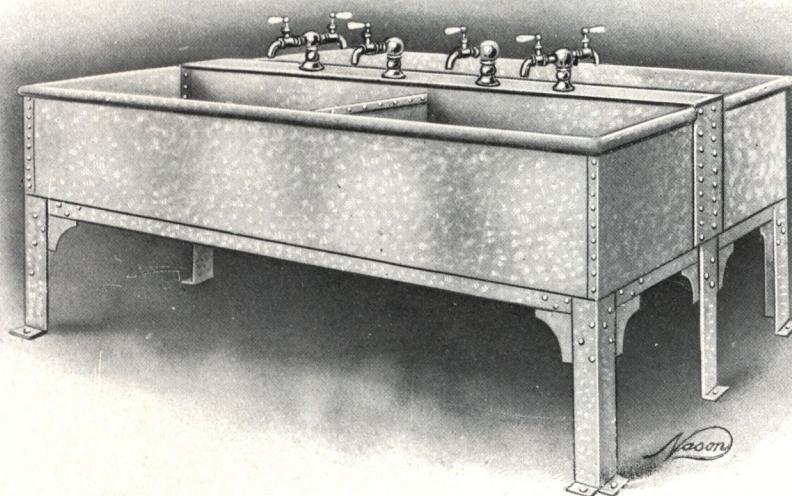


Plate 8950

The Nason Panama Galvanized Wrought Steel Roll Rim Double Scullery Sink, with Dividing Partitions in one Sink, supported on Galvanized Iron Frame and Legs, with Slate Union Strip, Brass Waste Plugs with Chains and Triple Connection, Two Duplex and Two Single Fuller Faucets with Special Connections.

Dimensions

Length over all, 62 inches. Width over all, 55 inches. Size Large Sink, 60 x 24 inches. Size of Compartment Sink, each 30 x 24 inches. Depth inside, 12 inches.

Price complete, as described..... 210.00

Special sizes made to order.

Metal Pantry Sinks

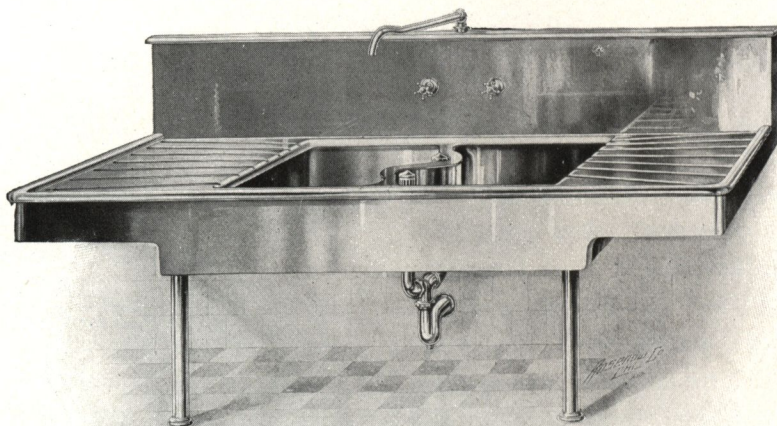


Plate 8960

Planished Copper Double Pantry Sink with S Dividing Partition and Right and Left-hand Drain Board, with Back and Apron, Nickel-plated Combination Compression Supply Fixture with Swinging Nozzle, Standing Waste and Overflow, Twin Waste Connection with Trap to wall, and Round Legs.

Dimensions

Length over all, 6 feet 6 inches. Width, 2 feet 3 inches. Height of Back, 12 inches. Depth inside, 7 inches.

Planished Copper, complete as described. 275.00

Can also be furnished in German Silver with White Metal Trimmings. Prices on application.

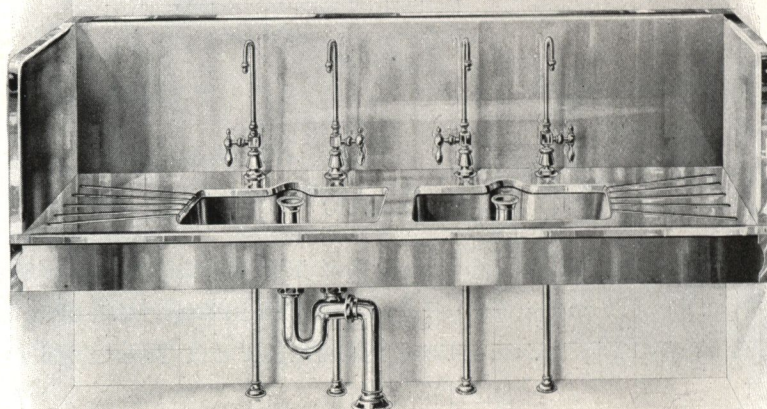


Plate 8961

Planished Copper Double Pantry Sink with Two 16 x 24 inch Recess Sinks, Right and Left-hand Drain Boards with Backs, Ends and Aprons, Nickel-plated Standing Wastes and Overflow, Goose Neck Pantry Cocks, Supply Pipes and Trap.

These Pantry Sinks are made to order to suit various conditions, therefore sizes cannot be given. Prices on application.
Can also be furnished of German Silver.

Metal Pantry Sinks

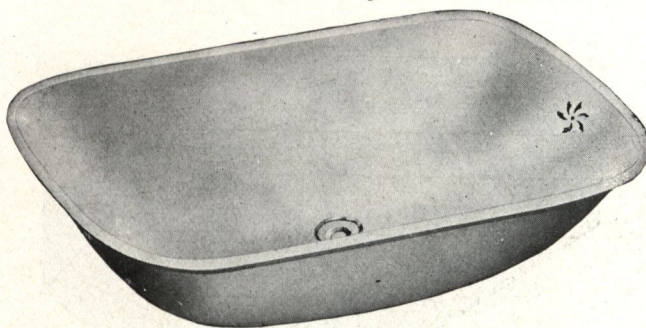


Plate 8970

Oval Pantry Sink

Size inside, inches.....	12 x 18	14 x 16	12 x 20	14 x 20	14 x 24	16 x 24	16 x 30	18 x 30
Tinned Copper, each.....	6.00	6.00	6.50	7.50	9.00	10.00	12.00	13.00
German Silver, each.....	15.00	16.00	16.50	18.00	19.50	22.00	24.00	27.00

For Connected Waste and Overflow, add 3.00

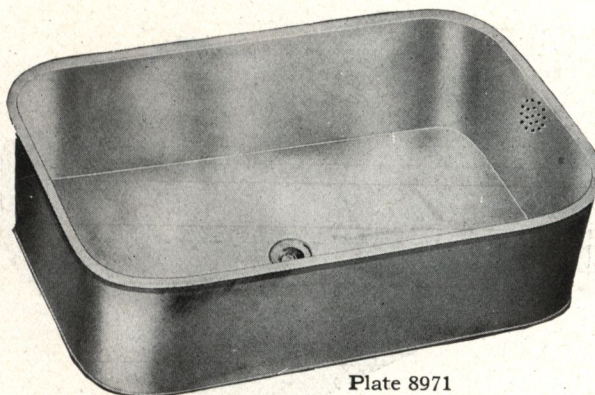


Plate 8971

Square Pantry Sink

Size inside, inches.....	12 x 18	14 x 16	12 x 20	14 x 20	14 x 24	16 x 24	16 x 30	18 x 30
Tinned Copper, each.....	4.50	4.50	5.00	6.00	7.00	8.00	10.00	11.00
German Silver, each.....	13.00	14.00	15.00	16.00	17.00	19.00	21.00	23.00

For Connected Waste and Overflow, add 3.00.

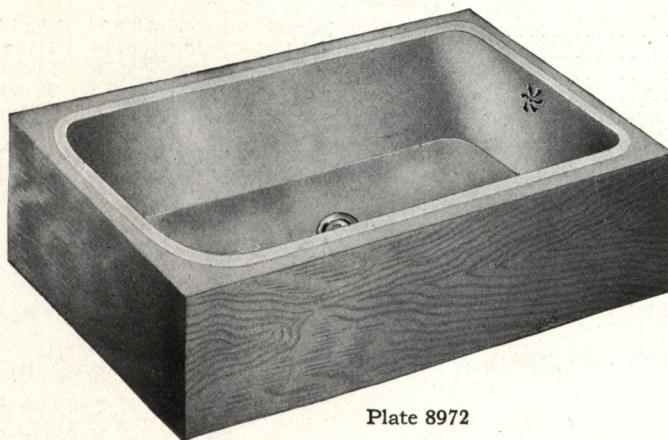


Plate 8972

Square Pantry Sink Encased

Size inside, inches.....	12 x 18	14 x 16	12 x 20	14 x 20	14 x 24	16 x 24	16 x 30	18 x 30
Tinned Copper, each.....	6.00	6.00	6.50	7.60	8.70	9.80	11.90	13.00
German Silver, each.....	11.00	13.00	12.00	14.10	16.20	18.30	21.40	24.00

For Connected Waste and Overflow, add 3.00.

Metal Pantry Sinks

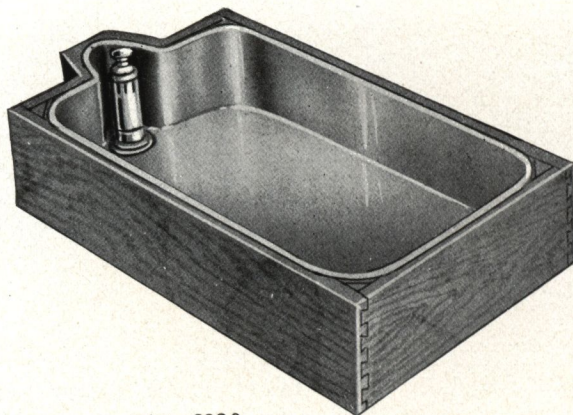


Plate 8980

Square Pantry Sink Encased with End Recess

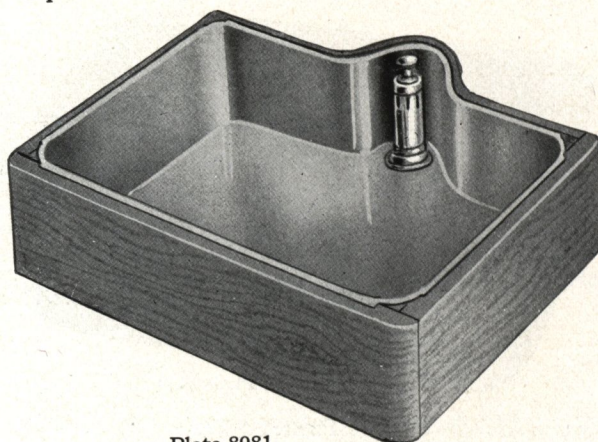


Plate 8981

Square Pantry Sink Encased with Back Recess

Plates 8980—8981

Size inside, inches.....	14 x 20	14 x 24	16 x 24	16 x 30	18 x 24	18 x 30	20 x 36
Tinned Copper, each.....	10.10	12.20	13.30	15.40	16.50	16.50	20.00
German Silver, each.....	19.50	21.00	22.50	24.50	27.00	27.00	30.00
White Metal, each.....	26.50	29.00	31.50	34.50	36.50	36.50	42.50

Nickel-plated Standing Waste extra. See below, Plate 8982.
 Note: Measurements are inside exclusive of Recess.

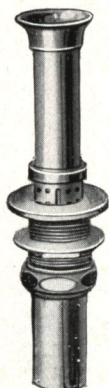


Plate 8982

Nickel-plated Standing Waste
and Overflow

Tail Piece of Waste, $1\frac{1}{2}$ inches outside diameter.

No. 1. Diameter of Flange of Plug Body, $2\frac{7}{8}$ inches. No. 2, diameter of Flange of Plug Body, $3\frac{3}{8}$ inches.

Plate 8982

Each..... 3.50



Plate 8983

Plate 8983

Pantry Sink Support

Rough Brass, each.....	5.00
Finished Brass, each.....	5.50
Nickel-plated, each.....	6.00

Nason Porcelain Pantry Sinks

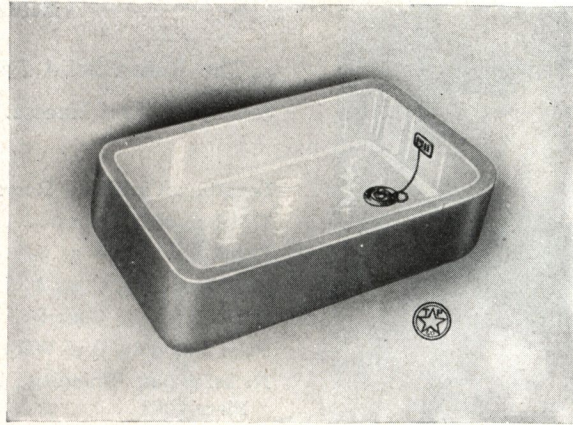


Plate 8990

The Roy Solid Porcelain Flat Rim Pantry Sink, Glazed inside only, with Nickel-plated Waste Plug with Chain and Stopper and Overflow Strainer.

No.....	1	2	3	4	5
Length outside, inches.....	20	23	24	28	30
Width outside, inches.....	14	16	17	17	20
Depth inside, inches.....	5	6	6	6	7
Price Sink only, Class A.....	6.00	7.75	8.50	10.25	12.00
Price Sink only, Class B.....	4.50	5.50	6.25	7.50	8.75
Price Sink only, Buff Ware.....	4.00	4.75	5.50	6.50	7.50
Nickel-plated Waste Plug and Coupling, each.....					1.25
Nickel-plated Overflow Strainer and Coupling, each.....					1.50

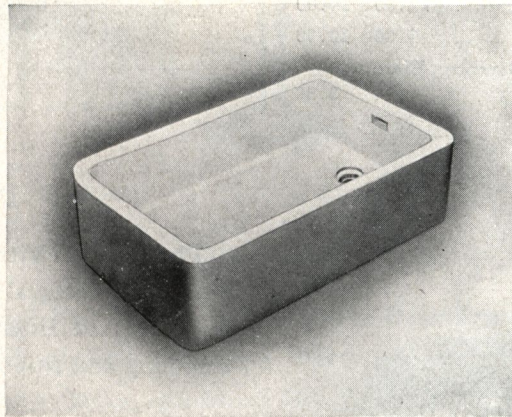


Plate 8991

The Reo Solid Porcelain Flat Rim Extra Deep Pantry Sink with Overflow, Glazed inside only.

No.....	1	2
Length outside, inches.....	28	30
Width outside, inches.....	17	20
Depth inside, inches.....	10	10
Price Sink only, Class A.....	12.00	14.75
Price Sink only, Class B.....	8.75	10.50
Price Sink only, Buff Ware.....	7.50	9.00

For price on Nickel-plated Waste Plug and Overflow Strainer see above.

Nason Porcelain and China Pantry Sinks

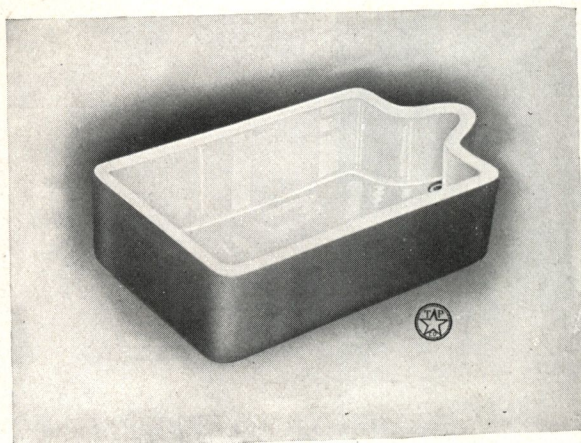


Plate 9000

Plate 9000

The Eaton Solid Porcelain Flat Rim Pantry Sink with End Recess. Glazed inside only.

Length, not including Recess, ins.	24	28	30
Width outside, inches	17	17	20
Depth inside, inches	6	6	6½
Price Sink only, Class A	9.50	11.25	13.00
Price Sink only, Class B	6.75	8.00	9.25
Price Sink only, Buff Ware	6.00	7.00	8.00
Nickel-plated Standing Waste and Overflow, Plate 8982			3.50

Plate 9001

The Earleton Solid Porcelain Flat Rim Pantry Sink with Back Recess. Glazed inside only.

Length outside, inches	28	32
Width, not including Recess, inches	16	18
Depth inside, inches	8	8
Price Sink only, Class A	12.00	14.00
Price Sink only, Class B	9.00	10.00
Nickel-plated Standing Waste and Overflow, Plate 8982		3.50

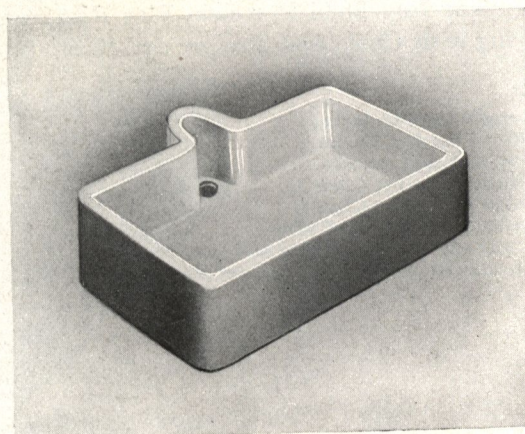


Plate 9001

Plate 9002

The Harmon Vitreous China Flat Rim Pantry Sink with Integral Slotted Grid and Overflow, Nickel-plated Brass 1¼-inch Outlet Plug and Coupling and Rubber Stopper.

Dimensions

Outside, inches	12 x 19	14 x 20
Inside, inches	9½ x 16½	11½ x 16½
Inside depth, inches	6	6
Price Sink only	11.00	13.00
Nickel-plated Waste Plug	1.50	1.50
Outside, inches	16 x 23	17 x 24
Inside, inches	13½ x 20½	14½ x 21½
Inside depth, inches	6	6
Price Sink only	15.00	18.00
Nickel-plated Waste Plug	1.50	1.50

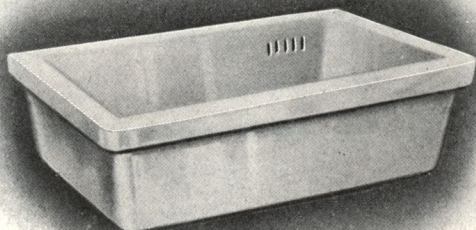


Plate 9002

Nason Porcelain Pantry Sink Combination

De Soto

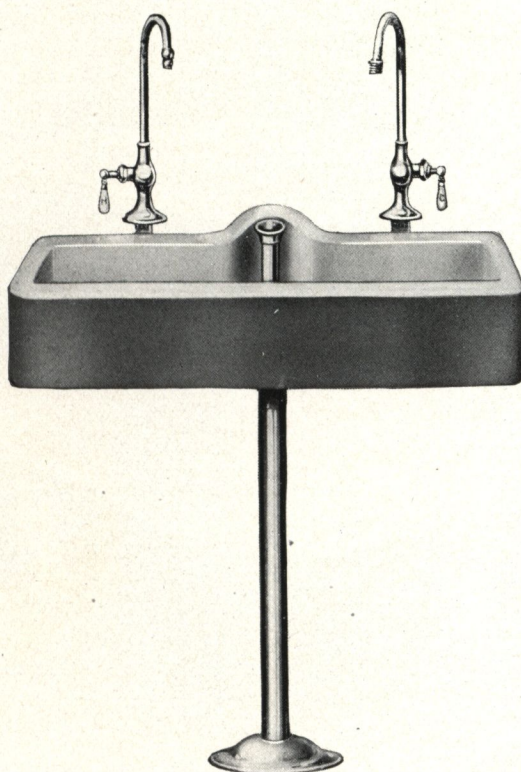


Plate 9010

The De Soto Solid Porcelain Flat Rim Pantry Sink with Back Recess, supported on Nickel-plated Standard and fitted with Nickel-plated Standing Waste and Overflow and No. 1 Quick Opening Compression Goose-neck Pantry Cocks with China Handles.

No.....	1	2
Length outside, inches.....	28	32
Width outside, not including Recess, inches.....	16	18
Depth inside, inches.....	8	8
Price complete as described, Class A.....	30.50	32.50
Price complete as described, Class B.....	27.25	28.75

This Combination is intended to be used in connection with a Hardwood or Marble Drain Board, which is usually furnished by another contractor.

Nason Porcelain Deep Pattern Sink

Millbrook

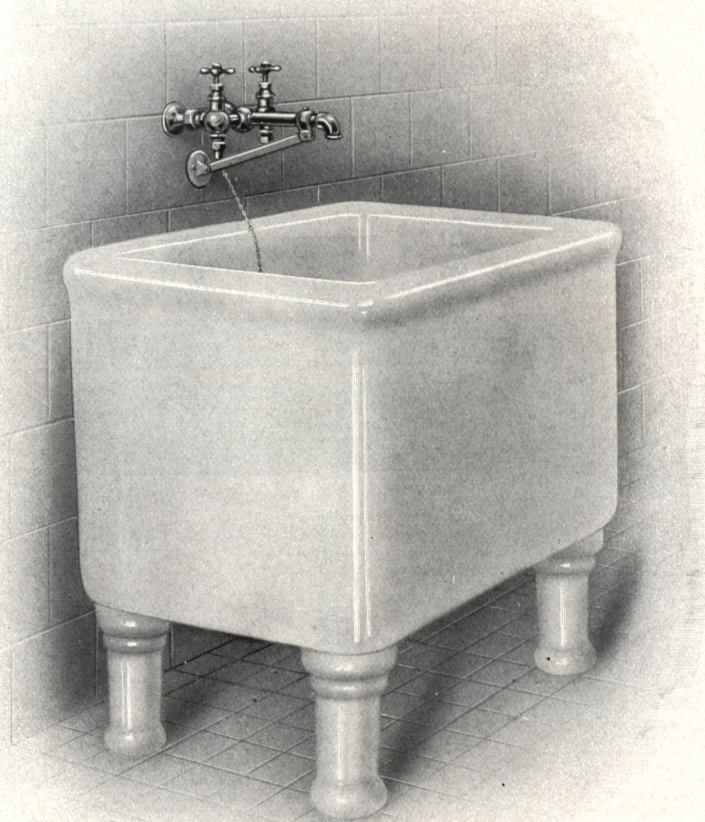


Plate 9020

The Millbrook Porcelain Roll Rim Deep Pattern Sink, supported on Four Porcelain Legs with Iron Frame, Navillus Combination Compression Single Spout Supply Fitting, Nickel-plated Brass with Integral Shut-offs and Wall Brace, Nickel-plated Chain and Stopper, Nickel-plated Plug and Trap.

Class	A	B
Size, 30 x 18 x 18 inches	83.00	65.00
Size, 30 x 24 x 18 inches	89.00	70.00
Size, 30 x 30 x 20 inches	95.00	74.00
Size, 36 x 24 x 20 inches	98.00	76.50
Size, 40 x 20 x 20 inches	103.00	80.50
Size, 42 x 26 x 17 inches	112.00	86.50
Size, 48 x 20 x 12 inches	108.00	83.00
Size, 48 x 24 x 18 inches	130.00	100.00
Size, 48 x 24 x 24 inches	140.00	108.00

Also made in the following sizes:

36 x 24 x 14 inches. 40 x 20 x 18 inches. 44 x 24 x 14 inches. 42 x 24 x 18 inches.

Prices on application.

If the above is furnished with Four Galvanized Legs instead of Porcelain Legs, deduct from Class A list 17.00; from Class B list 8.00.

Nason Porcelain Slop Sinks

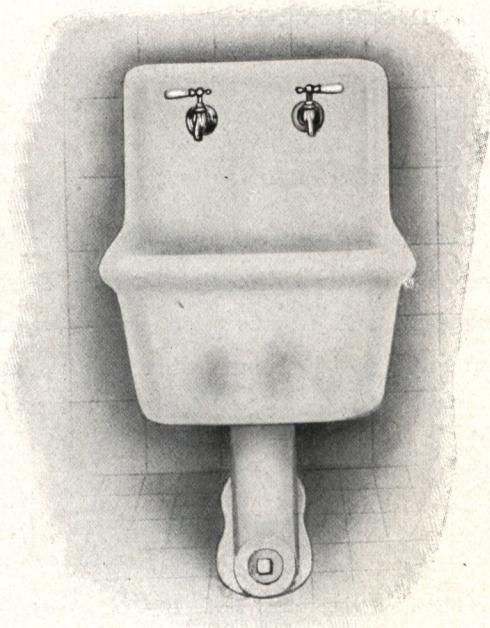


Plate 9030

Plate 9030

The Ancona Solid Porcelain Slop Sink, with Integral High Back, on Full S Enameled Iron Trap Standard, with Nickel-plated Waste Strainer, $\frac{5}{8}$ -inch Quick Opening Compression Faucets with China Handles.

Size of Sink, inches.....	20 x 18	22 x 20	24 x 22
Height of Back, inches.....	12	13	13
Depth inside, inches.....	12	12	12
Price Sink only, Vitreous Porcelain..	25.00	29.50	32.00
Price Sink only, Class A.....	22.25	27.50	30.50
Price Sink only, Class B.....	14.75	18.00	21.25
Price Sink only, Buff Ware.....	15.00	17.50	20.75
Full S Trap Standard, Enameled inside and N. P. Strainer	10.50		
$\frac{5}{8}$ -inch Quick Opening Compression Faucets, as shown, per pair.....	5.00		

Note: Can be furnished with any style of Trap Standard desired. See page 908.

Plate 9031

The Rialto Solid Porcelain All Roll Rim Slop Sink on Half S Enameled Iron Adjustable Trap Standard, with Nickel-plated Waste Strainer, Spring Rim Guard and $\frac{3}{4}$ -inch Fuller Sink Cocks.

Size of Sink, inches.....	20 x 16	22 x 18	24 x 20
Depth inside, inches.....	12	12	12
Price Sink only, Vitreous Porcelain...	18.50	22.00	25.50
Price Sink only, Class A.....	12.25	15.25	18.50
Price Sink only, Class B.....	8.75	11.00	13.25
Price Sink only, Buff Ware.....	8.50	10.75	12.50
Half S Adjustable Trap Standard, Enameled Inside and Nickel-plated Strainer.....	10.50		
$\frac{3}{4}$ -inch Fuller Sink Faucets, as shown, per pair.....	5.00		
Nickel-plated Spring Rim Guard, each.....	10.00		

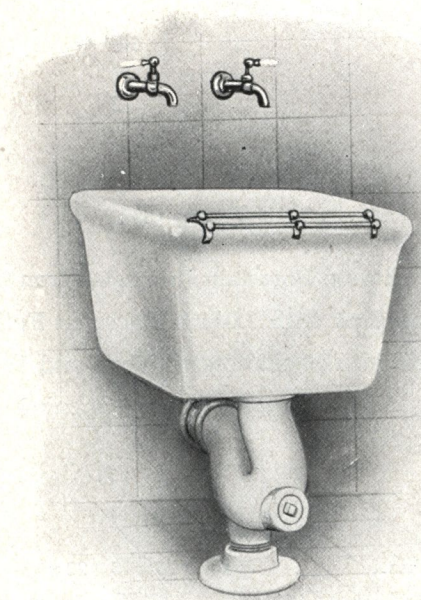


Plate 9031

Note: Outlet of Adjustable Trap Standard is tapped for 3-inch iron pipe. Can be furnished with any style of Trap Standard desired. See page 908.

Nason Porcelain Enameled Iron Slop Sinks

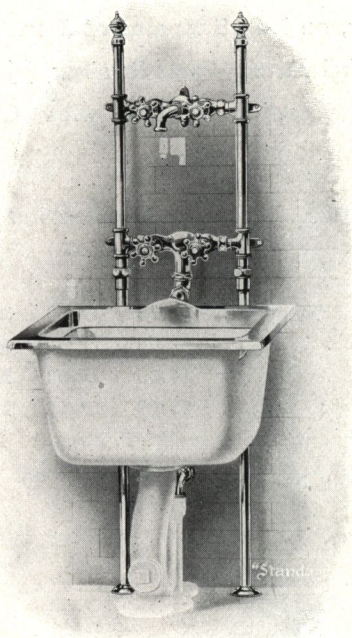


Plate 9040

Plate 9040

The Harlem Porcelain Enameled Iron Slop Sink, on Full S Iron Trap Standard, with Nickel-plated Waste Strainer, Flushing Rim and Compression Spout Supply and Flushing Rim Fitting with China Index Handles and Supply Pipes.

Prices

Sizes, inches.....	20 x 16	22 x 18	22 x 20	24 x 20
As described.....	76.50	82.00	84.50	87.50

This Sink can be furnished with other styles of Trap Standards. See page 908.

Plate 9041

The Hudson Porcelain Enameled Iron One-piece Roll Rim Slop Sink with 12-inch Back, on Full S Iron Trap Standard with Nickel-plated Vent and Waste Strainer, $\frac{5}{8}$ -inch Nickel-plated Quick Opening Compression Faucets.

Prices

Sizes, inches.....	20 x 16	22 x 18	22 x 20	24 x 20
As described.....	27.75	30.75	32.25	34.00
Less Faucets.....	23.00	26.00	27.50	29.25

This Sink can be furnished with other styles of Trap Standards. See page 908.

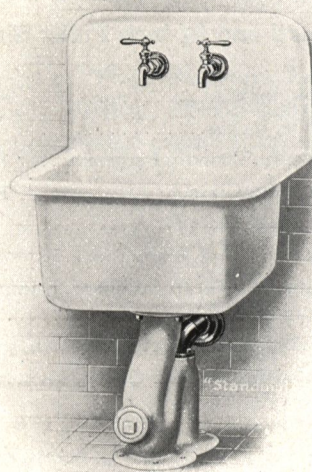


Plate 9041

Nason Porcelain Enameled Iron Slop Sinks

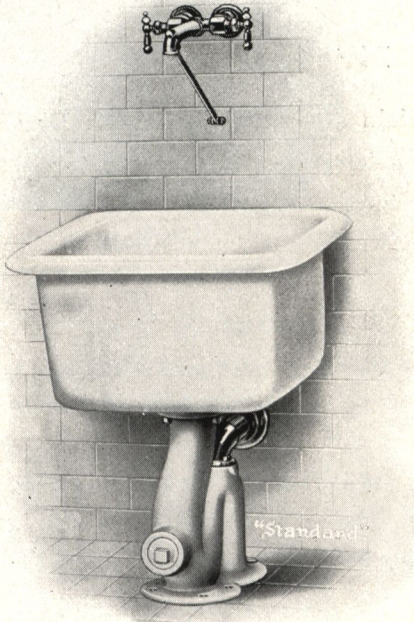


Plate 9050

Plate 9050

The Delaware Porcelain Enameled Iron All Roll Rim Slop Sink on Full S Iron Trap Standard with Nickel-plated Vent and Waste Strainer, Fuller Combination Supply Fitting with Pail Hook and Wall Brace.

Prices

Sizes, inches.....	20 x 16	22 x 18	22 x 20	24 x 20
As described.....	28.00	30.50	32.00	33.50
Less Supply Fitting.....	20.75	23.00	24.50	26.00

Plate 9051

The Amazon Porcelain Enameled Iron Flat Rim Slop Sink with 15-inch Separate Back, on Full S Trap Standard with Nickel-plated Vent and Waste Strainer, $\frac{5}{8}$ -inch Nickel-plated Quick Opening Compression Faucets.

Prices

Sizes, inches.....	16 x 16	20 x 16	22 x 18	22 x 20	24 x 20
As described.....	22.50	24.50	27.25	28.00	29.25
Less Faucets.....	18.00	20.00	22.75	23.50	25.00

Any style of Trap Standards can be furnished with these Sinks.
See page 908.

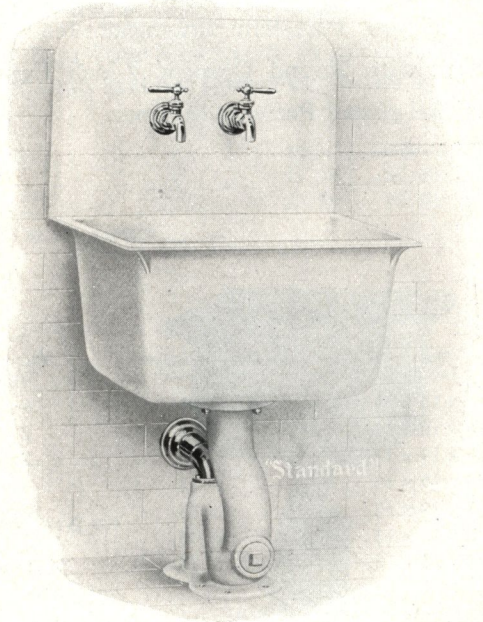


Plate 9051

Nason Porcelain Enameled Iron Slop Sinks

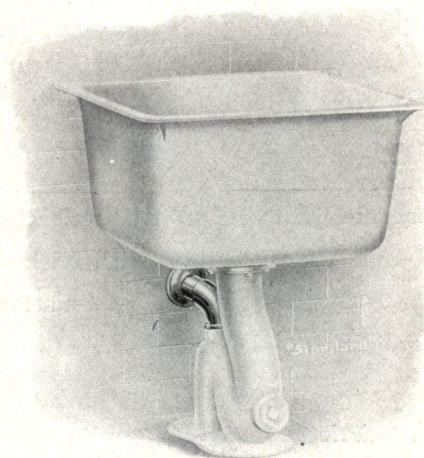


Plate 9060

Plate 9060

The Ohio Porcelain Enameled Iron Flat Rim Slop Sink, on Full S Iron Trap Standard with Nickel-plated Vent and Waste Strainer.

Prices

Sizes, inches.....	16 x 16	20 x 16	22 x 18	22 x 20	24 x 20
As described.....	14.25	15.75	18.25	19.00	20.25

This Sink can be furnished with other styles of Trap Standards. See page 908.

Plate 9061

Nason Porcelain Enameled Iron Flat Rim Slop Sink with Round Corners, 2-inch Center Outlet with Nickel-plated Perfecto Strainer.

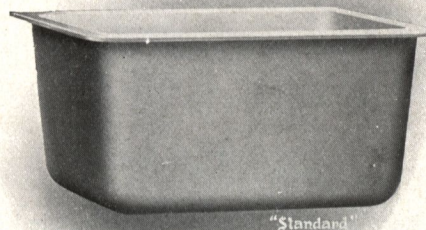


Plate 9061

Prices

Sizes Inches	Painted Inside and Outside	Enameled Inside	Sizes Inches	Painted Inside and Outside	Enameled Inside
16 x 16 x 10	3.50	6.50	24 x 20 x 12	6.50	10.50
16 x 16 x 12	4.15	7.00	30 x 20 x 12	10.25	16.70
20 x 14 x 12	4.50	7.50	36 x 20 x 12	12.80	20.20
20 x 16 x 12	6.15	8.75	36 x 21 x 16	18.00	28.00
22 x 20 x 12	5.75	10.00	48 x 20 x 12	22.50	30.00
23 x 15 x 15	5.45	9.60	48 x 20 x 17	29.00	32.00
24 x 18 x 12	5.75	9.60	72 x 20 x 17	33.60	52.60

For Patent Overflow, add..... 3.00
 For Patent Overflow and Perfecto Plug Strainer, add..... 3.50

Cast Iron Kitchen and Slop Sinks

Plate 9070

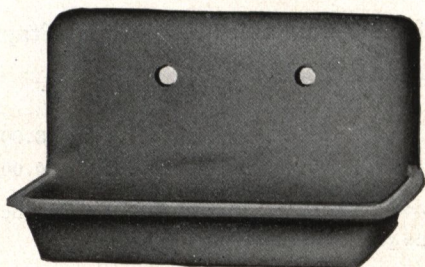


Plate 9070

Cast Iron One-piece Roll Rim Kitchen Sink with 12-inch High Back, supported on Concealed Wall Hanger, with Open Strainer and Coupling for lead pipe.

Sizes Inches	Plain	Galvanized
24 x 18	9.50	12.25
30 x 20	12.25	15.00
36 x 22	12.50	18.75
42 x 20	17.50	20.75

Full Round Legs, per pair, 6.00

Per pair, 7.00

Plate 9071

Cast Iron Flat Rim Slop Sink with Open Strainer and Coupling for lead pipe.

Sizes Inches	Plain	Galvanized
16 x 16 x 10	2.70	5.25
20 x 14 x 12	3.50	6.50
20 x 16 x 12	4.00	8.25
24 x 20 x 12	5.00	9.50
30 x 20 x 12	8.00	15.00
36 x 21 x 12	10.00	19.00

Add for Patent Overflow 1.00

Add for Patent Overflow and Plug Strainer 1.25

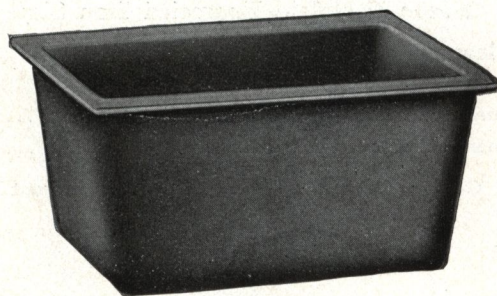


Plate 9071

Plate 9072

Cast Iron One-piece Roll Rim Slop Sink, with 12-inch Back, supported on Cast Iron Full S Trap Standard, with Outlet for lead or iron pipe.

	Plain	Galvanized
Size 22 x 20 x 12 inches.....	27.00	36.00
Size 24 x 20 x 12 inches	28.75	38.00

Half S Trap Standard furnished at same price.

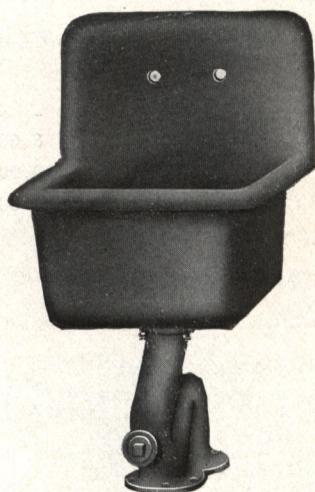


Plate 9072

Plate 9073

Cast Iron All Roll Rim Slop Sink with Open Strainer, supported on Cast Iron Full S Trap Standard, with Outlet for lead or iron pipe.

	Plain	Galvanized
Size 24 x 20 x 12 inches.....	29.00	35.00

Half S Trap Standard furnished at same price.

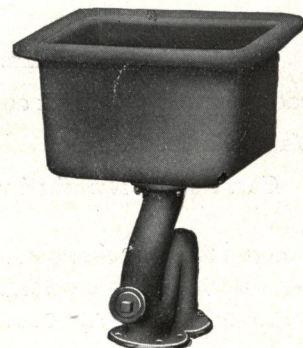


Plate 9073

Porcelain Enameled Iron Trap Standards

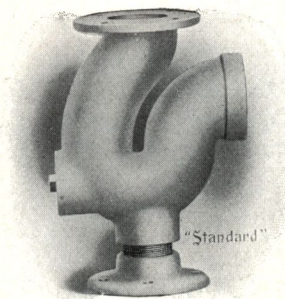


Plate 9080

Plate 9080

Nason Porcelain Enameled Iron Adjustable Slop Sink Trap Standard with Vertical Adjustment and Cleanout.

Enameled inside, as described.....	8.00
Enameled all over, as described.....	10.00

Regularly furnished for 2-inch or 3-inch I. P. R. H. Thread Outlet. Can be furnished for L. H. Thread Outlet at same price. Specify when ordering.

Plate 9081

Nason Porcelain Enameled Iron Slop Sink Trap Standard with Cleanout and Hub Vent for iron pipe.

Enameled inside, as described.....	8.00
Enameled all over, as described.....	10.00

Can also be furnished for lead pipe and without Hub Vent.

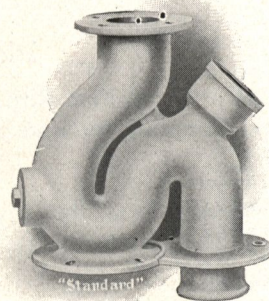


Plate 9081

Plate 9082

Nason Porcelain Enameled Iron Slop Sink Trap Standard for iron pipe with Cleanout and Nickel-plated Brass Vent to wall, with Washer Joint.

Enameled inside, as described.....	8.00
Enameled all over, as described.....	10.00
If with Ground Joint Vent Connection, add.....	1.00

Can also be furnished for lead pipe.

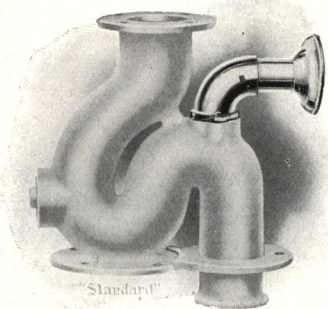


Plate 9082

Plate 9083

Nason Porcelain Enameled Iron Slop Sink Trap Standard for lead pipe with Cleanout and Nickel-plated Brass Vent to wall, with Washer Joint.

Can also be furnished without Vent.

Enameled inside, as described.....	8.00
Enameled all over, as described.....	10.00
If with Ground Joint Vent Connection, add.....	1.00

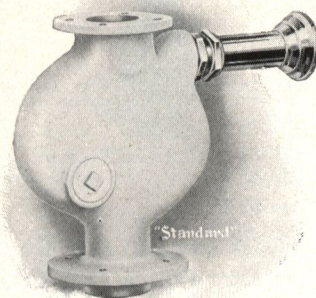


Plate 9083

Note: All Trap Standards are furnished regularly painted one coat outside and enameled inside.

Nason Emergency Table and Wall Slop Sink

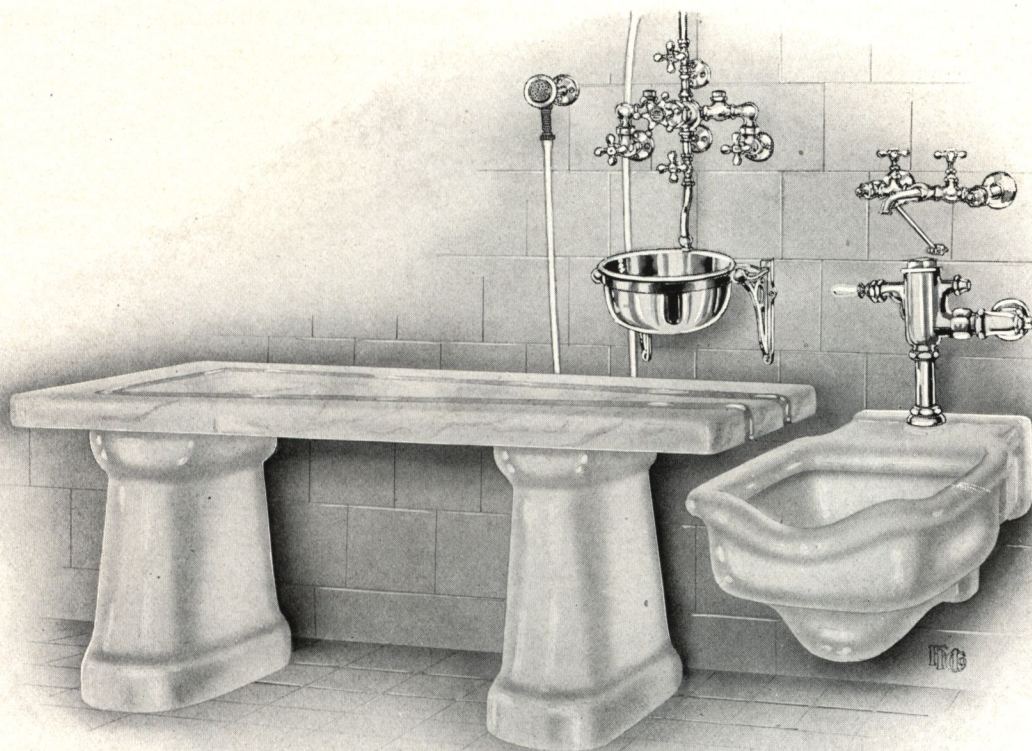


Plate 9090

Nason Italian Marble Countersunk Emergency Table, supported on Two Solid Porcelain Pedestals, Glazed all over, Nickel-plated Table Fixture with Government Anti-scalding Valve, Check Valves and $\frac{1}{2}$ -inch Compression Supply Stops with Index Handles, Supply Spout to Tilting Basin and Shampoo with Compression Control Valves, Rubber Hose, Sprinkler and Wall Hook, Nickel-plated Copper Tilting Basin with Cast Brass Brackets.

Vitreous China Wall Slop Sink with Flushing Rim and Wall Outlet, supplied with No. 42 Nickel-plated Flush Valve with China Oscillating Handle and Shut-off, Compression Combination Slop Sink Fixture with China Index Handles, Pail Hook and Wall Brace.

Complete, as shown and described..... 300.00

Approximate Measurements

Table: Length over all, 78 inches. Width over all, 30 inches. Height, floor to top, 30 inches.

Slop Sink: Wall to front of Rim, $25\frac{1}{4}$ inches. Width, 20 inches.

Tables can be furnished in other sizes and grades of marble.

Nason Surgeons' Sink

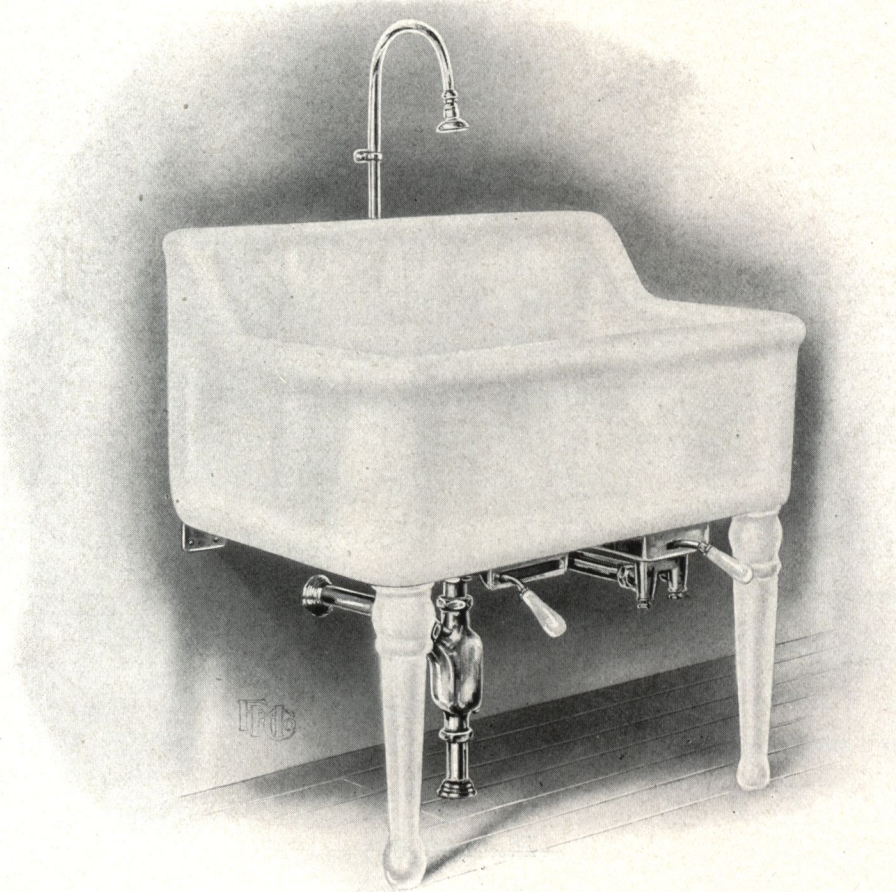


Plate 9100

Nason Solid Porcelain One-piece Surgeons' Sink, supported on Porcelain Legs with Iron Reaches to wall, fitted with Nickel-plated Knee Action Hot and Cold Supply with China Lever Handle, Goose-neck Spout with Removable Rose Spray, $\frac{1}{2}$ -inch I. P. Size Supply Pipes to wall, Knee Action Pop-up Waste with China Lever Handle and $1\frac{1}{2}$ -inch Cast Brass Trap to floor with Vent to wall.

Complete, as shown and described, Class A.....	150.00
Complete, as shown and described, Class B.....	135.00

Dimensions

Length, 36 inches. Width, 23 inches. Depth inside, $10\frac{1}{2}$ inches. Height of Back, 6 inches.

Nason Porcelain Surgeons' Sink

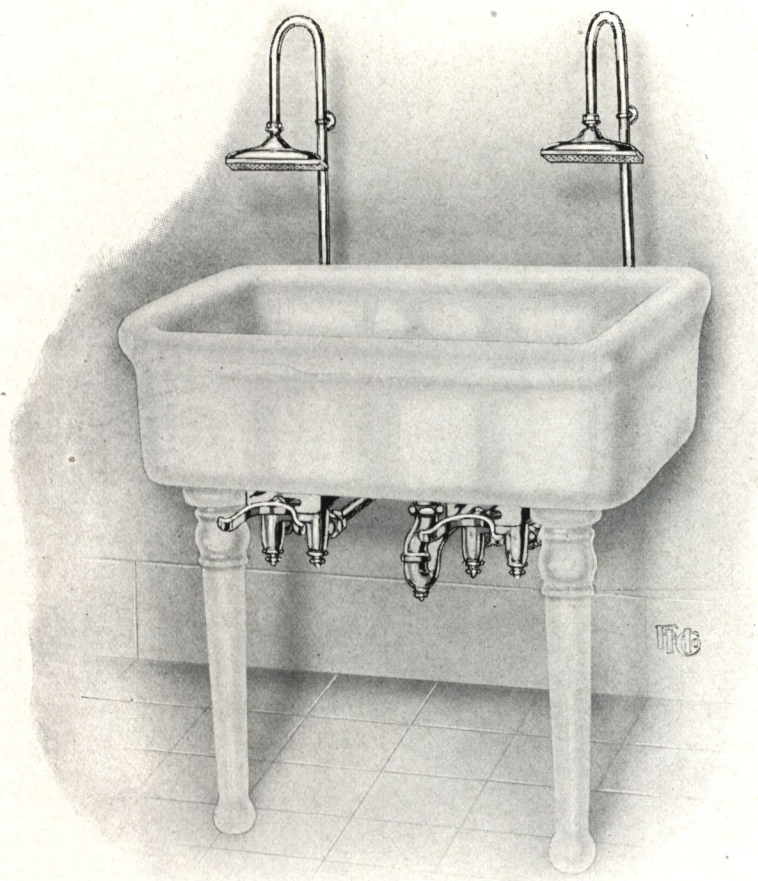


Plate 9110

Nason Porcelain All Roll Rim Surgeons' Sink, supported on Porcelain Legs with Iron Reaches to wall, fitted with Nickel-plated Knee Action Hot and Cold Goose-neck Supply Spouts with $2\frac{1}{2}$ x 8-inch Cast Rectangular Sprays, $\frac{1}{2}$ -inch I. P. Size Supply Pipes to wall with Loose Key Compression Stops, Open Waste Strainer and $1\frac{1}{2}$ -inch Half S Cast Brass Trap to wall.

Prices

Size, inches.....	36 x 23	42 x 24	48 x 24
As described, Class A.....	90.00	100.00	110.00
As described, Class B.....	75.00	85.00	95.00

Depth inside, $7\frac{1}{2}$ inches.

Nason Porcelain Surgeons' Sink

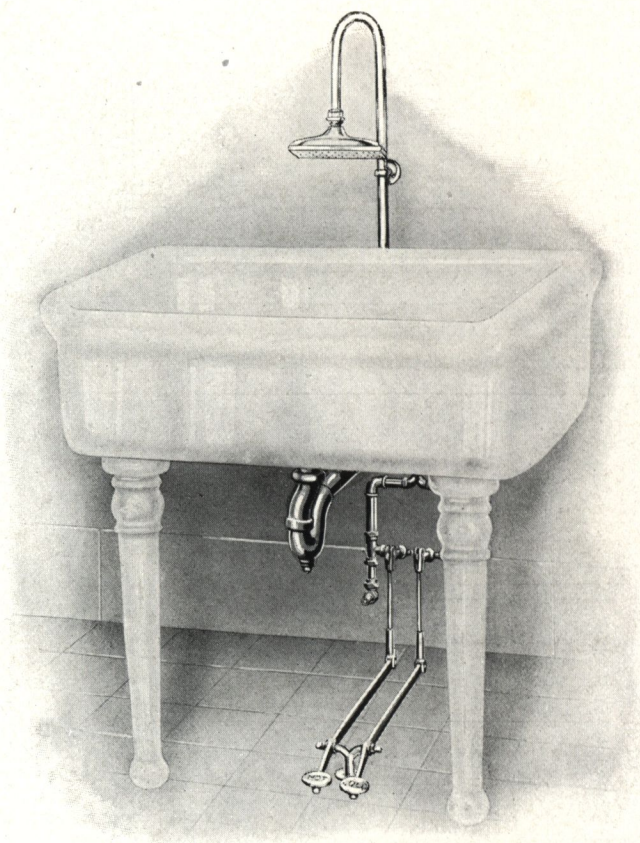


Plate 9120

Nason Porcelain All Roll Rim Surgeons' Sink, supported on Porcelain Legs with Iron Reaches to wall, fitted with Nickel-plated Pedal Action Hot and Cold Goose-neck Supply Spout with 2½ x 8-inch Cast Rectangler Spray, Special ½-inch I. P. Size Supply Pipes to wall with Loose Key Compression Stops, Open Waste Strainer and 1½-inch Cast Brass Trap to wall.

Prices

Size, inches.....	30 x 20	36 x 23	42 x 24	48 x 24
As described, Class A.....	70.00	75.00	80.00	90.00
As described, Class B.....	65.00	70.00	75.00	85.00

Depth inside, 7½ inches.

This Sink Combination can be furnished with Single Knee Action Supply Fixture as shown on Plate 9110, page 911, at the same price.

Nason Porcelain Surgeons' Sink



Plate 9130

Nason Porcelain Roll Rim Surgeons' Wash-up Sink, supported on Porcelain Legs with Iron Reaches to wall, Nickel-plated Brass Knee Action Supply Fixture with Pipe for Hot and Cold Water, including Nickel-plated Mixing Column Pipe with Arm Spray, Nickel-plated Standing Waste and Overflow, Nickel-plated Knee Action Waste Fitting, with Nickel-plated Brass Trap.

Prices

Class.....	A	B
Size, 24 x 17 inches.....	70.00	65.00
Size, 30 x 20 inches.....	75.00	68.00
Size, 36 x 23 inches.....	79.00	71.00
Size, 42 x 24 inches.....	86.00	76.00
Size, 48 x 24 inches.....	93.00	81.00

Nason Porcelain Hospital Sinks

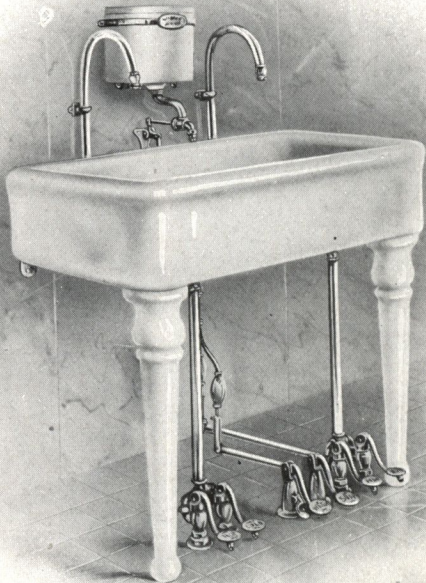


Plate 9140

Plate 9141

Nason Porcelain All Roll Rim Sterilizing Sink, supported on Porcelain Legs with Iron Reaches to wall, fitted with Heavy Tinned and Planished Copper Perforated Steam Tray with Cover and Nickel-plated Brass Iron Pipe Size Steam Coil with Supply and Return Pipes to wall, with Wheel Handle Regulating Valves, $\frac{3}{4}$ -inch Nickel-plated I. P. Size Supply Pipes to wall with Air Chambers and Cross Handle Compression Stops, $\frac{1}{2}$ -inch Compression Faucets with China Index Handles, Nickel-plated Standing Waste and $1\frac{1}{2}$ -inch Cast Brass Trap to wall.

Prices
As Described

Class	A	B
Size, 24 x 18 inches	90.00	80.00
Size, 30 x 20 inches	100.00	90.00
Size, 36 x 23 inches	115.00	105.00
Size, 42 x 24 inches	130.00	120.00
Size, 48 x 24 inches	140.00	130.00

Depth inside, $7\frac{1}{2}$ inches.

Plate 9140

Nason Porcelain All Roll Rim Surgeons' Sink, supported on Porcelain Legs with Iron Reaches to wall, fitted with Nickel-plated Pedal Action Hot and Cold Gooseneck Supply Spouts, Pedal Action Pop-up Waste, $1\frac{1}{2}$ -inch Cast Brass Trap to wall and Vitreous China Liquid Soap Container with Nickel-plated Spout and operated by Pedal Valve.

Prices
As Described

Class	A	B
Size, 36 x 23 inches	100.00	90.00
Size, 42 x 24 inches	110.00	100.00
Size, 48 x 24 inches	125.00	115.00

Depth inside, $7\frac{1}{2}$ inches.

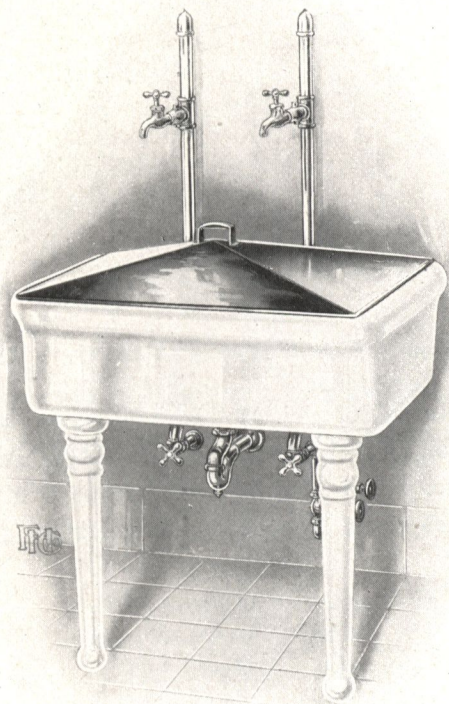


Plate 9141

Nason Porcelain Hospital Lavatory

Ridgewood



Plate 9150

The Ridgewood Porcelain Roll Rim Instrument Washing Lavatory, supported on Porcelain Legs with Iron Reaches to wall, with Nickel-plated Brass Knee Action Supply Fitting, Nickel-plated Brass Low-down Spout, Nickel-plated Trap and Open Strainer.

Prices

Size, inches.....	36½ x 24
As described, Class A.....	78.00
As described, Class B.....	65.00

Nason Hospital Slop Sink

Barclay



Plate 9160

The Barclay Heavy China Flushing Rim Slop Sink, size 22 x 22 inches, with No. 1 Push-button Nickel-plated Brass Flushing Valve with Integral Shut-off, Navillus Combination Compression Single Spout Supply Fitting, Nickel-plated Brass with Integral Shut-offs and Wall Brace, supported on Porcelain-lined Adjustable Iron Trap Standard with Nickel-plated Strainer.

As described 60.00

Nason Hospital Slop Sink



Plate 9170

Nason Porcelain Slop Sink with Nickel-plated Brass Flushing Rim, Porcelain-lined Iron Trap Standard, Nickel-plated Strainer, No. 1 Push-button Nickel-plated Brass Flushing Valve with Integral Shut-off, Navillus Combination Single Spout Supply Fitting, Nickel-plated Brass with Integral Shut-offs and Wall Brace.

Prices

Size, inches.....	20 x 16 x 12	22 x 18 x 12	24 x 22 x 12
As described, Class A.....	80.00	84.00	88.00
As described, Class B.....	60.00	64.00	68.00

Nason Hospital Slop Sink

Gouverneur



Plate 9180

The Gouverneur Heavy China Syphon Jet Flushing Rim Slop Sink, size 20 x 20 inches, with No. 1 Push-button Nickel-plated Brass Flushing Valve with Integral Shut-off, Navillus Combination Compression Single Spout Supply Fitting, Nickel-plated Brass, with Integral Shut-offs and Wall Brace, Brass Floor Flange, Bolts and China Bolt Caps.

As described 80.00

Nason Hospital Slop Sink

Scarsdale



Plate 9190

The Scarsdale Heavy China Flushing Rim Clinic Slop Sink, with Trap Standard Integral, with No. 1 Push-button Nickel-plated Brass Flushing Valve with Integral Shut-off, Nickel-plated Brass Combination Compression Fixture with Cleansing Jet, Navillus Combination Compression Single Spout Supply Fitting, Nickel-plated Brass with Integral Shut-offs and Wall Brace, Brass Floor Flange, Bolts and China Bolt Caps.

As described 115.00

Nason Supply Nozzles and Pedal Valves for Surgical Lavatories



Plate 9200

Nason Nickel-plated Supply Nozzle, Low Pattern. Small size for surgical lavatories.

Each..... 3.00

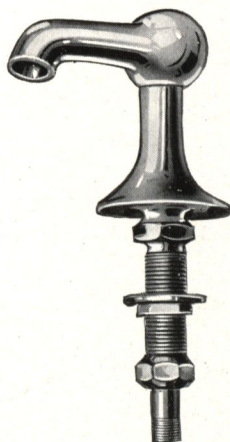


Plate 9201

Nason Nickel-plated Supply Nozzle. Extra large size for surgical lavatories.

Each..... 5.00

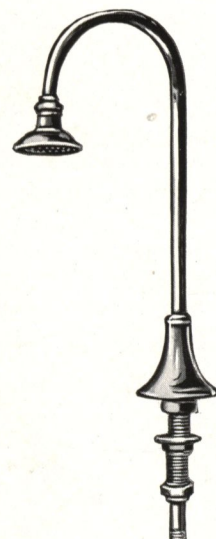


Plate 9202

Nason Nickel-plated Raised Supply Nozzle with Removable Rose Spray for surgical lavatories.

Each..... 7.00

Tail pieces threaded for $\frac{1}{4}$ -inch iron pipe.

All of the above Supply Nozzles are used in connection with Pedal and Foot Action Supply Valves.

Pedal Valves

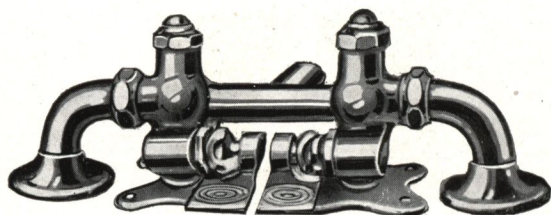


Plate 9203

Nason Nickel-plated Double Pedal Valve arranged for Hot and Cold Water for surgical lavatories. Inlet and Outlet for $\frac{1}{2}$ -inch iron pipe, female.

Each..... 18.00

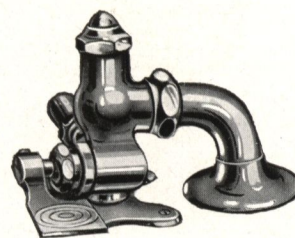


Plate 9204

Nason Nickel-plated Single Pedal Valve for surgical lavatories. Inlet and Outlet for $\frac{1}{2}$ -inch iron pipe, female.

Each..... 8.00

The Valves are Non-hammering, Self-closing Pattern and may be readily re-washed.

Nason Supply and Waste Fixtures for Surgical Lavatories

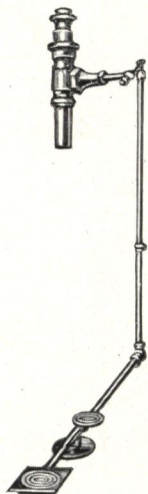


Plate 9210

Nason Nickel-plated Pedal Waste, with Pop-up Plug for vitreous china or enameled iron surgical lavatory having overflow.

Each.....	14.00
Each, for Lavatory or Sink without Overflow.....	16.00

Tail Piece of Waste, $1\frac{1}{4}$ inch outside diameter.
Diameter of Flange of Plug, $2\frac{1}{8}$ inches.

When ordering either of the above fixtures for lavatories or sinks without overflow, give the diameter of countersinking and thickness of ware at waste outlet.

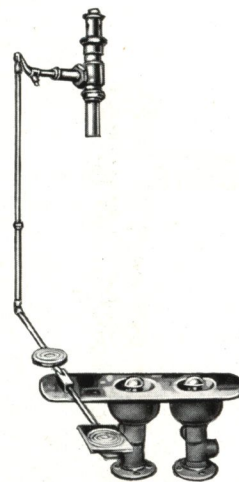


Plate 9211

Nason Nickel-plated Foot Action Supply and Waste Fixture for vitreous china or enameled iron lavatory having overflow.

Each.....	34.00
Each, for Lavatory or Sink without Overflow.....	36.00

Tail Piece of Waste, $1\frac{1}{4}$ inches outside diameter.
Diameter of Flange of Plug, $2\frac{1}{8}$ inches.
Valve Inlets and Outlets, $\frac{1}{2}$ -inch iron pipe.

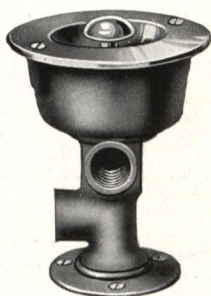


Plate 9212

Nason Foot Action Valve for drinking fountains, surgical lavatories and sinks with inlet and outlet for $\frac{1}{2}$ -inch iron pipe, female.

Each.....	10.00
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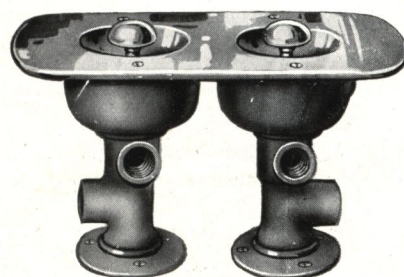


Plate 9213

Nason Foot Action Valves for surgical lavatories and sinks, arranged for hot and cold water, with Inlets and Outlets for $\frac{1}{2}$ -inch iron pipe, female.

Each.....	19.00
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The Valves are Non-hammering, Self-closing Pattern for hot and cold water. They are set in the floor, in water-tight brass boxes with polished and nickel-plated covers and may be readily re-washed from top of boxes.

Nason Porcelain Laundry Trays



Plate 9220

The Domestic Solid Porcelain Laundry Trays, with Integral High Back, on Porcelain Legs and Iron Wall Clamps, Nickel-plated Compression Stub Pattern Faucets with China Index Handles, Waste Plugs and Couplings, Safety Chain, and 1½-inch Continuous Waste with Full S Vented Trap.

Size of Trays outside, inches.....	26 x 26	29 x 26	36 x 26
Depth of Tray inside, inches.....	15	15	15
Price of Tray only, Class A, each.....	33.25	37.25	41.25
Price of Tray only, Class B, each.....	23.50	26.50	39.25
Price of Tray only, Buff Ware, each.....	21.75	24.00	26.50
Porcelain Legs and Iron Wall Clamps, per pair.....	7.25		
Buff Ware Legs and Iron Wall Clamps, per pair.....	5.00		
White Enamel Painted Iron Legs and Wall Clamps, per pair.....	2.50		
Bronzed Iron Legs and Wall Clamps, per pair.....	2.50		
Nickel-plated 5/8-inch Compression Stub Pattern Faucets with China Index Handles, per pair...	3.75		
Nickel-plated Waste Plugs and Couplings, each.....	1.50		
Nickel-plated 1½-inch Continuous Waste, per section.....	5.00		
Nickel-plated 1½-inch Full S Vented Trap.....	5.00		
Metal-bound Ash Wringer Base, each.....	4.50		

Nason Porcelain Laundry Trays

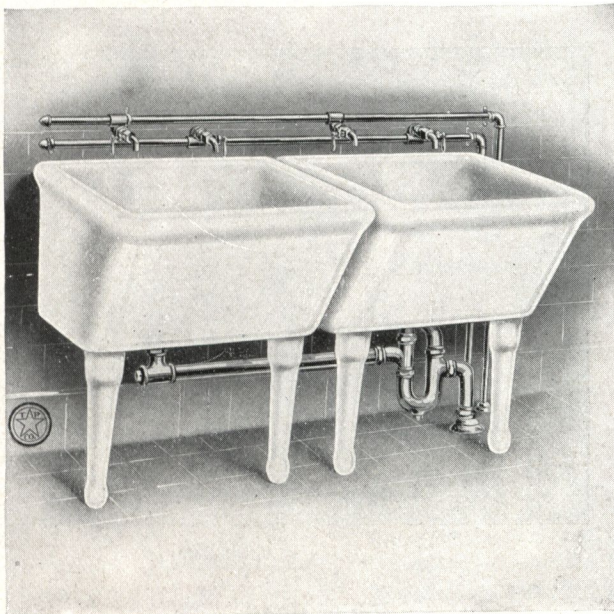


Plate 9230

The Home Solid Porcelain All Roll Rim Laundry Trays, on Porcelain Legs and Iron Wall Clamps, Nickel-plated Fuller Pattern Faucets, Waste Plugs and Couplings and 1½-inch Continuous Waste with Full S Vented Trap.

Size of Trays outside, inches.....	24 x 24	26 x 24	29 x 25	36 x 24
Depth of Trays inside, inches.....	15	15	15	15
Price of Tray only, Class A, each.....	22.00	23.25	24.25	40.00
Price of Tray only, Class B, each.....	15.75	16.75	17.25	30.00
Price of Tray only, Buff Ware, each.....	14.50	15.50	16.50	26.00

Porcelain Legs and Iron Wall Clamps, per pair.....	7.25
Buff Ware Legs and Iron Wall Clamps, per pair.....	5.00
White Enamel Painted Iron Legs and Wall Clamps, per pair.....	2.50
Bronzed Iron Legs and Wall Clamps, per pair.....	2.50
Nickel-plated ⅝-inch Fuller Faucets, per pair.....	3.00
Nickel-plated Waste Plug and Coupling, each.....	1.50
Nickel-plated 1½-inch Continuous Waste, per section.....	5.00
Nickel-plated 1½-inch Full S Vented Trap.....	5.00
Metal-bound Ash Wringer Base, each.....	4.50

Faucets can be arranged inside of the Trays if so desired.

Nason Porcelain Laundry Trays

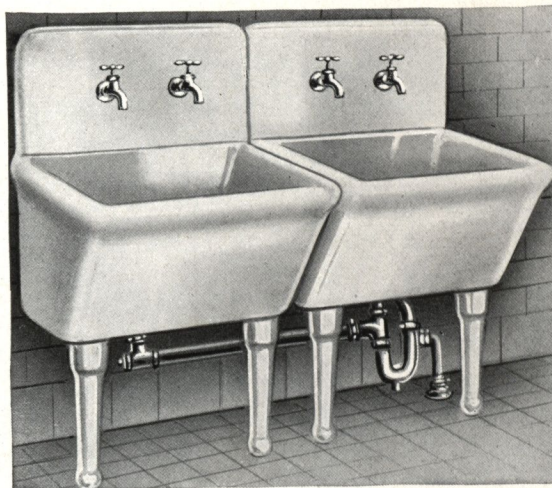


Plate 9240

The Cottage Solid Porcelain Three-quarter Roll Rim Laundry Trays with Separate Backs, on Porcelain Legs and Iron Wall Clamps, Nickel-plated Tee Handle Compression Faucets, Waste Plugs and Couplings and 1½-inch Continuous Waste with Full S Vented Trap.

	24 x 24	26 x 24	29 x 24
Size of Trays outside, inches.....	14½	14½	14½
Depth of Trays inside, inches.....	15	15	15
Height of Backs, inches.....	22.00	23.25	24.25
Price of Tray only, Class A, each.....	15.75	16.75	17.25
Price of Tray only, Class B, each.....	14.50	15.50	16.50
Price of Tray only, Buff Ware, each.....	7.00	8.50	9.00
Price of Back only, Class A, each.....	5.50	5.75	6.50
Price of Back only, Class B, each.....	5.00	5.50	5.75
Price of Back only, Buff Ware, each.....			
Porcelain Legs and Iron Wall Clamps, per pair.....			7.25
Buff Ware Legs and Iron Wall Clamps, per pair.....			5.00
White Enamel Painted Iron Legs and Wall Clamps, per pair.....			2.50
Bronzed Iron Legs and Wall Clamps, per pair.....			2.50
Nickel-plated ⅝-inch Tee Handle Compression Faucets, per pair.....			3.00
Nickel-plated Waste Plug and Coupling, each.....			1.50
Nickel-plated 1½-inch Continuous Waste, per section.....			5.00
Nickel-plated 1½-inch Full S Vented Trap.....			5.00
Metal-bound Ash Wringer Base, each.....			4.50

Nason Porcelain Laundry Trays



Plate 9250

Plate 9250

The Duplex Solid Porcelain All Roll Rim Two-part Laundry Tray all in one piece, on Porcelain Legs and Iron Wall Straps, with Nickel-plated Plugs and Couplings, Twin Waste Connection with 1½-inch Half S Trap to wall and Stub Pattern Faucets with China Index.

Dimensions

Length over all.....	46½ inches
Width over all.....	25 inches
Inside length of Tubs.....	20 inches
Inside depth.....	15¾ inches

Price

Complete, as described, Class A.....	64.25
Complete, as described, Class B.....	53.75
Complete, as described, Buff Ware.....	51.00

Plate 9251

The Modern Solid Porcelain All Roll Rim Laundry Tray with Extension at rear to attach Cover. Set on Porcelain Legs and Iron Wall Clamps, Nickel-plated Stub Pattern Faucets, Waste Plug and Coupling, 1½-inch Half S Trap, and Ash Drain Board Cover, with Rubber Bumpers and Special Hinges.

Dimensions

No.....	1	2
Length outside, inches.....	26	29
Width outside, inches.....	27	28
As described, Class A.....	50.50	51.25
As described, Class B.....	41.25	42.00
As described, Buff Ware.....	39.75	40.55

Kitchen Sink not included in price.

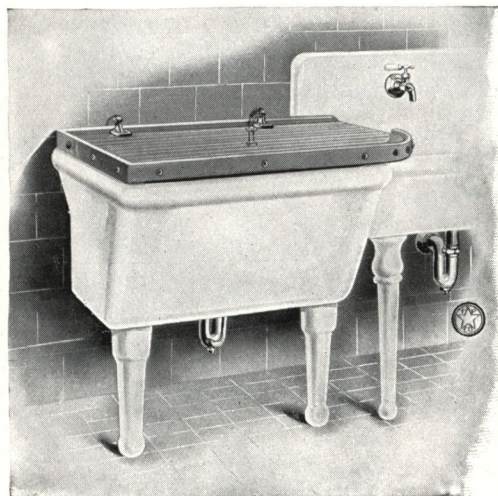
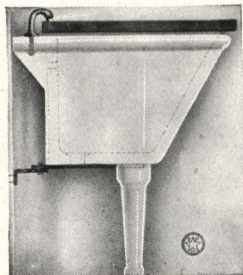


Plate 9251



Detail View of Plate 9251

The advantage of this Tub is the extension or ledge at rear, making it possible to fasten Cover direct to ware, without fastening to wall. See detail view showing method of attaching.

Nason Flat Rim Porcelain Wash Trays

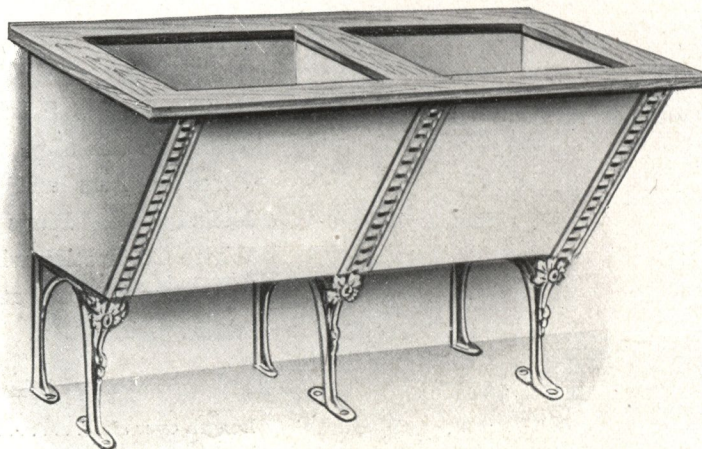


Plate 9260

The Grand White Porcelain and Vitrified Brown Glazed Flat Rim Laundry Trays, with Ash Frame and Iron Legs and Strips and Stamped Brass Plugs, with Bolts.

Dimensions

No.	1	2	3
Length, inches	28	26	24
Width, inches	24½	24½	24½
Depth, inches	16½	16½	16½

Each Tub is composed of one solid piece of Hard-burned Earthenware 1½ inches thick, and finished inside and outside with an impervious glaze, which makes them sanitary and durable.

Plate 9260. White Ware

Nos. 1, 2 or 3

	Class A	Class B
Single Tray, Galvanized Iron Legs and Ash Frame	15.00	10.70
Set of 2 Trays, Galvanized Iron Legs and Ash Frame	25.50	18.00
Set of 3 Trays, Galvanized Iron Legs and Ash Frame	38.00	26.50
Set of 4 Trays, Galvanized Iron Legs and Ash Frame	50.00	35.50

Prices include Stamped Brass Plugs and Bolts.

If Cast Brass Plugs and Couplings are wanted, add each Tray .75

Plate 9260. Brown Ware

Nos. 1, 2 or 3

	Class A	Class B
Single Tray, Bronzed Iron Legs and Ash Frame	12.50	8.25
Set of 2 Trays, Bronzed Iron Legs and Ash Frame	22.50	15.00
Set of 3 Trays, Bronzed Iron Legs and Ash Frame	32.50	21.25
Set of 4 Trays, Bronzed Iron Legs and Ash Frame	43.75	28.75

Prices include Stamped Brass Plugs and Bolts.

If Cast Brass Plugs and Couplings are wanted, add each Tray .75

Hardwood Covers, per opening, see Plate 9351	2.50
Galvanized Iron Covers, per opening, see Plate 9352	1.25
White Porcelain Enameled Iron Covers, per opening, see Plate 9350	3.50
Finished Brass ½-inch Fuller Faucets, per pair	2.50
Finished Brass ½-inch Compression Faucets, per pair	2.00

Nason Flat Rim Porcelain Wash Trays

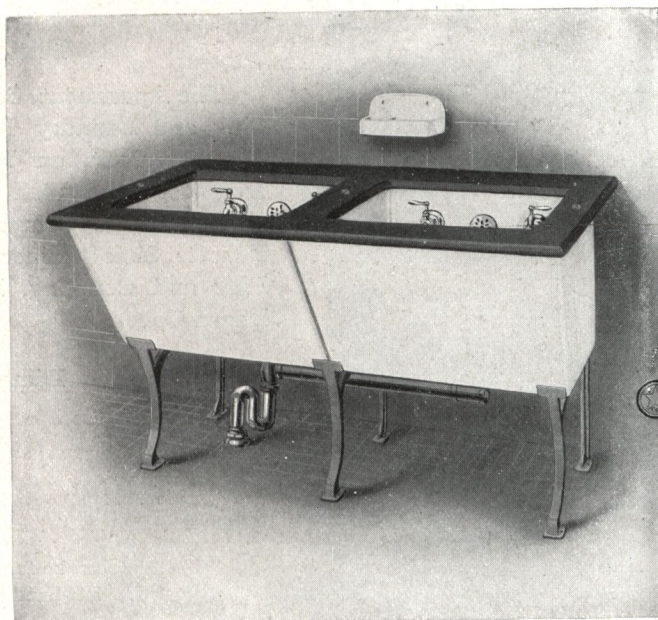


Plate 9270

The Troy Solid White Porcelain and Buff Ware Flat Rim Laundry Trays with Ash Frame, New Style Iron Legs, Brass Overflows, Faucets, Waste Plugs, Continuous Brass Waste and 1½-inch Trap to floor.

Plate 9270. Class A

	24 x 24	27 x 24	29 x 24
Size Outside, each Tray, inches.....	15	15	15
Depth Inside, inches.....	22.00	23.00	24.35
Single Tray, Galvanized Iron Legs and Ash Frame.....	41.00	43.00	45.60
Set of 2 Trays, Galvanized Iron Legs and Ash Frame.....	60.60	64.00	67.60

Plate 9270. Class B

	24 x 24	27 x 24	29 x 24
Size Outside each Tray, inches.....	15	15	15
Depth Inside, inches.....	17.00	18.00	18.75
Single Tray, Galvanized Iron Legs and Ash Frame.....	31.10	32.70	34.25
Set of 2 Trays, Galvanized Iron Legs and Ash Frame.....	45.85	49.55	52.00

Plate 9270. Buff Ware

	24 x 24	27 x 24	29 x 24
Size Outside each Tray, inches.....	15	15	15
Depth Inside, inches.....	15.50	16.15	17.00
Single Tray, Bronzed Iron Legs and Ash Frame.....	28.00	30.00	30.55
Set of 2 Trays, Bronzed Iron Legs and Ash Frame.....	42.60	44.40	46.50

Hardwood Covers, per opening, see Plate 9351.....	2.50
Galvanized Iron Covers, per opening, see Plate 9352.....	1.25
White Porcelain Enameled Iron Covers, per opening, see Plate 9350.....	3.50
Polished Brass Plug and Coupling, each.....	1.25
Finished Brass ½-inch Compression Faucets, per pair.....	2.00

Nason Porcelain Tray and Sink Combination



Plate 9280

Plate 9280

The Apartment Solid Porcelain Kitchen Sink and Laundry Tray Combination with Integral Back, on White Enamel Painted Iron Legs and Wall Clamps, Nickel-plated China Handle Compression Sink and Tray Faucets, Sink Strainer and Wash Tray Waste Plug and Coupling, Removable Ash Drain Board Cover.

Dimensions

Length over all.....	50 inches
Width over all.....	23 inches
Sink inside.....	21 inches
Tray inside.....	22 inches
Height of Back.....	5½ inches

Sink can be furnished on right or left-hand side of Tub

Price, Combination Sink and Tray only, Class A.....	62.50
Price, Combination Sink and Tray only, Class B.....	35.50
White Enamel Painted Iron Legs and Wall Clamps, Set of three.....	4.50
Nickel-plated Sink Strainer and Coupling.....	2.00
Nickel-plated Waste Plug and Coupling for Tray.....	1.50
Nickel-plated ⅝-inch China Handle Compression Sink Faucets, per pair.....	4.00
Nickel-plated ½-inch Stub Pattern Wash Tray Faucets, per pair.....	2.00
Ash Drain Board Cover.....	10.00

Nason Porcelain Drinking Trough

Plate 9281

The Paddock Solid Porcelain One-piece Drinking Trough on Porcelain Pedestals, glazed inside and outside, with Nickel-plated Waste Plug and Coupling, 2-inch Trap to wall, Supply Pipes with Air Chambers and Compression Faucets with China Index Handles.

Dimensions

Length.....	42 inches
Width.....	26 inches
Depth inside.....	17 inches
Height, floor to top of Rim.....	30 inches

Class.....	A	B
As described.....	80.50	65.00

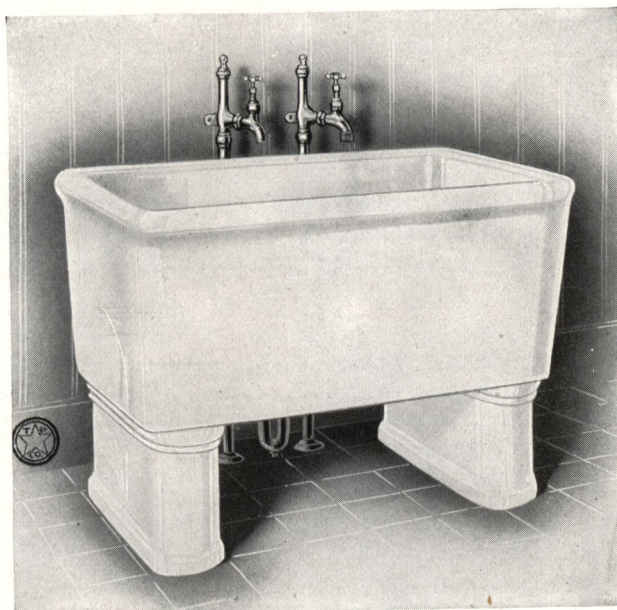


Plate 9281

Nason Porcelain Enameled Iron Laundry Trays

Bellmore

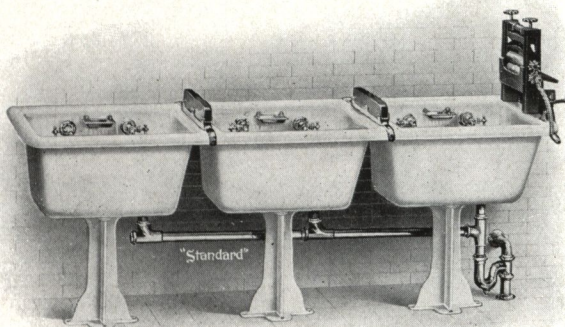


Plate 9290

Bellmore Porcelain Enameled Iron All Roll Rim Laundry Trays, supported on Painted Pedestals, with Nickel-plated Union Strips and Hardwood Wringer Holders, Fuller Pattern Faucets, Soap Dishes, Waste Plugs with Rubber Stoppers and 1½-inch Continuous Waste and Vented S Trap.

Dimensions

Front to Back outside.....	26 inches
Length over all.....	83 inches

Prices

	1-Section	2-Section	3-Section
As described.....	39.50	73.25	106.75
As described, less Faucets, Waste, and Trap.....	30.00	53.75	80.75
For each additional Section as described, add.....			39.75
For each additional Section as described, less Faucets, Waste and Trap, add.....			33.00
For Nickel-plated Brass Overflow, add per Section.....			3.00

Wringer as shown not included in above prices. Quoted on application only.

Nason Porcelain Enameled Iron Laundry Trays

Flatbush

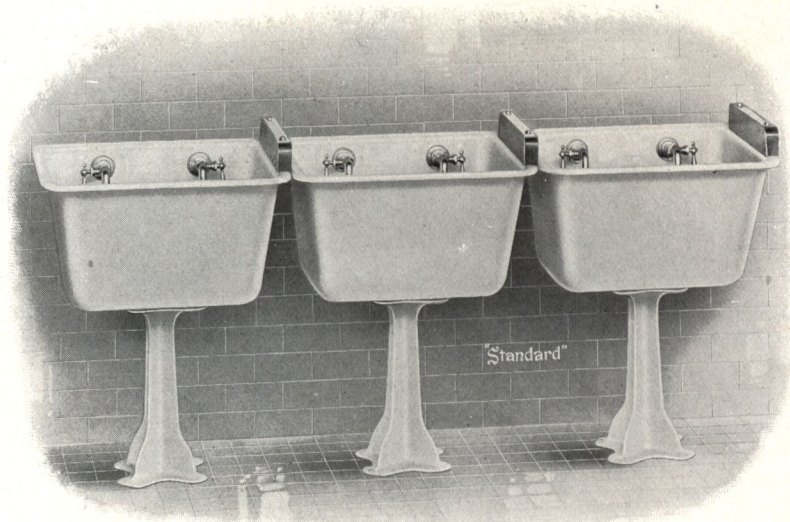


Plate 9300

Flatbush Porcelain Enameled Iron Flat Rim Laundry Trays, supported on Painted Pedestals, with Hardwood Wringer Holder on each Section bolted to Rim. Nickel-plated Fuller Pattern Faucets, and Waste Plugs with Rubber Stoppers.

Dimensions

Front to Back outside.....	22 inches
Length over all.....	72½ inches
Floor to top of Rim.....	30¼ inches

Prices

	1 Section	2 Section	3 Section
As described.....	18.00	34.50	51.50
As described, less Faucets.....	14.00	27.75	41.50
For each additional Section, as described, add.....			18.00
For each additional Section, as described, less Faucets, add.....			14.00
For Nickel-plated Brass Overflow, add per Section.....			3.00

Nason Porcelain Enameled Iron Laundry Trays

Stamford

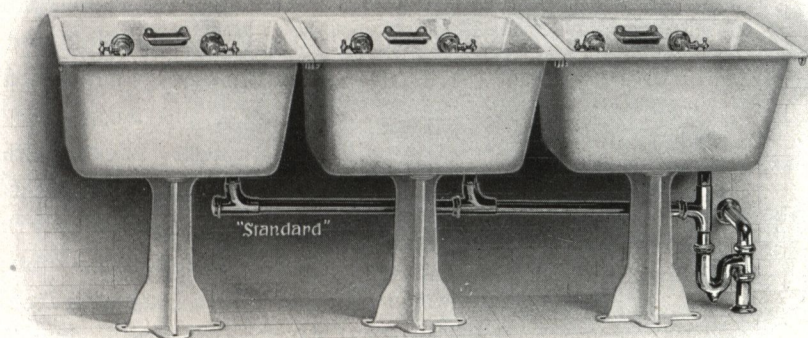


Plate 9310

Stamford Porcelain Enameled Iron Flat Rim Laundry Trays, supported on Painted Pedestals, with Nickel-plated Fuller Pattern Faucets, Soap Dishes, Waste Plugs with Rubber Stoppers, and 1½-inch Continuous Waste and Vented S Trap.

Dimensions

Front to Back, outside.....	25½ inches
Length over all.....	77 inches
	1-Section 2-Section 3-Section
As described.....	25.25 51.00 73.75
As described, less Faucets, Waste and Trap.....	16.00 31.75 47.50
For each additional Section, as described, add.....	25.25
For each additional Section, less Faucets, Waste and Trap, add.....	16.00
For Nickel-plated Brass Overflow, add per Section.....	3.00
For Nickel-plated Strip and Hardwood Wringer Holder, add per Section.....	4.00

Plate 9311

Merrick Porcelain Enameled Iron Flat Rim Sink and Laundry Tray Combination with Separate 12-inch Back and Nickel-plated Union Strip, supported on Painted Pedestal and Wall Sink Bracket, with Nickel-plated Faucets, Waste Strainers and 1½-inch Half S Trap on Sink and Tray.

Sink can be fitted on either side of tray.

Dimensions

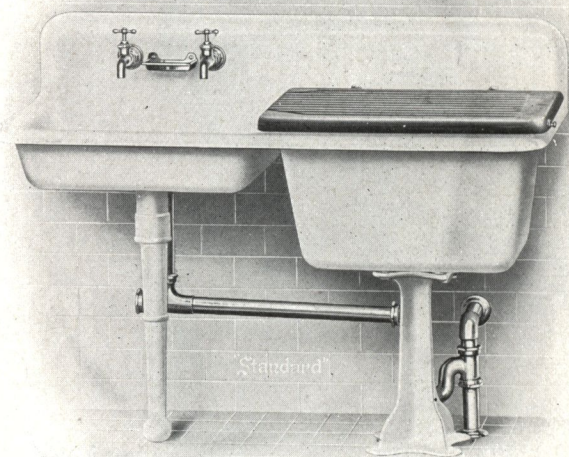
Sink outside, 20 x 24, 20 x 30 and 20 x 36 inches.
Tray outside, 22 x 24 inches.
Floor to top of Rim, 30¼ inches.
Length over all, 48½, 54½ and 60½ inches.

Merrick. Plate 9311

Prices

One Tray and 20 x 24-inch Sink, as described.....	45.00
One Tray and 20 x 30-inch Sink, as described.....	47.50
One Tray and 20 x 36-inch Sink, as described.....	48.75

Nason Porcelain Enameled Iron Sink and Laundry Trays



Gotham. Plate 9320

Plate 9320

Gotham Porcelain Enameled Iron Roll Rim One-piece Sink and Laundry Tray Combination, supported on Painted Pedestal and Adjustable Sink Leg, Sink fitted with Nickel-plated Compression Faucets, Soap Dish and Perfecto Waste Strainer. Laundry Tray fitted with Nickel-plated Compression Faucets, Soap Dish and Waste Plug with Rubber Stopper, and Hardwood Drain Board Cover; Combination fitted with 1½-inch Continuous Waste and Vented S Trap.

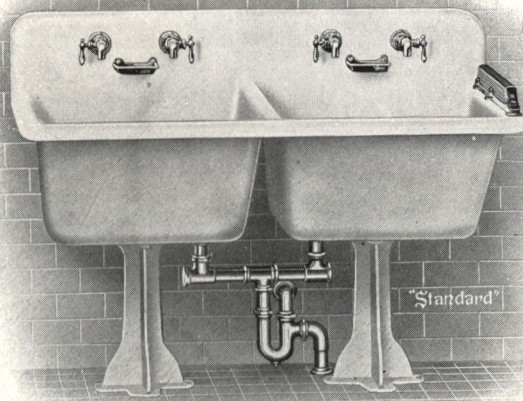
Dimensions

Front to Back, outside.....	23½ inches
Length over all.....	50 inches
Height of Back.....	8 inches
Floor to top of Rim.....	30 inches
Price as described.....	85.00

Can be furnished with Sink on right-hand side at same price.

Plate 9321

Villa Porcelain Enameled Iron Roll Rim One-piece, Two-section Laundry Tray, supported on Painted Pedestals, with Nickel-plated Fuller Pattern Faucets, Soap Dishes, Waste Plugs with Rubber Stoppers, Hardwood Wringer Holder and 1½-inch Combination Waste and Vented S Trap.



Villa. Plate 9321

Dimensions

Front to Back.....	25½ inches
Length over all.....	53 inches
Floor to top of Rim.....	31¼ inches
Height of Back.....	8 inches
Price as described.....	80.00

Soapstone Laundry Trays

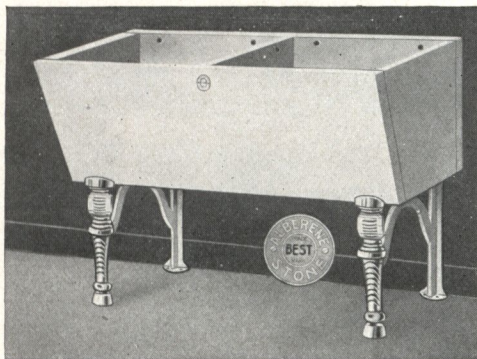


Plate 9330

Soapstone Laundry Tray with Right or Left-hand Waste, Plain Iron Legs and Brass Bolted Plugs.

Single as Described		Two-part as Described		Three-part as Described	
Size 24 x 24 x 16 inches deep..	14.50	Size 48 x 24 x 16 inches deep..	22.00	Size 72 x 24 x 16 inches deep..	33.00
Size 30 x 24 x 16 inches deep..	15.00	Size 54 x 24 x 16 inches deep..	24.00	Size 78 x 24 x 16 inches deep..	39.00
Size 36 x 24 x 16 inches deep..	16.75	Size 60 x 24 x 16 inches deep..	27.00	Size 84 x 24 x 16 inches deep..	44.00
Add for Galvanized Legs.....	2.00	Add for Twin Waste.....	2.00	Size 90 x 24 x 16 inches deep..	49.00
		Add for Galvanized Legs.....	2.00	Size 96 x 24 x 16 inches deep..	72.00
				Add for Galvanized Legs.....	3.00

All measurements are outside.

Note: See page 935 for various styles of Covers, which are extra.

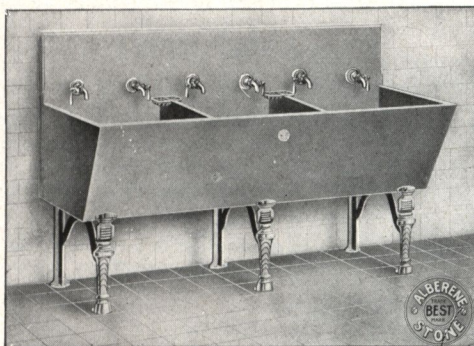


Plate 9331

Soapstone Laundry Tray with Solid High Back, with Right or Left-hand Waste, Plain Iron Legs and Brass Bolted Plugs and Faucets.

Single, as Described		12 Inch High Back	16 Inch High Back	
Size 24 x 24 x 16 inches deep.....		17.50	20.50	
Size 30 x 24 x 16 inches deep.....		19.50	21.00	
Size 36 x 24 x 16 inches deep.....		22.00	23.00	
Two-part, as Described		6 Inch High Back	12 Inch High Back	16 Inch High Back
Size 48 x 24 x 16 inches deep.....	31.00		32.75	33.75
Size 54 x 24 x 16 inches deep.....	33.75		35.50	36.75
Size 60 x 24 x 16 inches deep.....	36.25		38.75	40.50
Add for Twin Waste.....				2.00
Three-part, as Described		12 Inch High Back	16 Inch High Back	
Size 72 x 24 x 16 inches deep.....		50.00	55.50	
Size 78 x 24 x 16 inches deep.....		55.50	58.00	
Size 84 x 24 x 16 inches deep.....		59.50	62.50	
Size 90 x 24 x 16 inches deep.....		68.50	72.00	

All measurements are outside.

Combination Soapstone Laundry Tub and Kitchen Sink

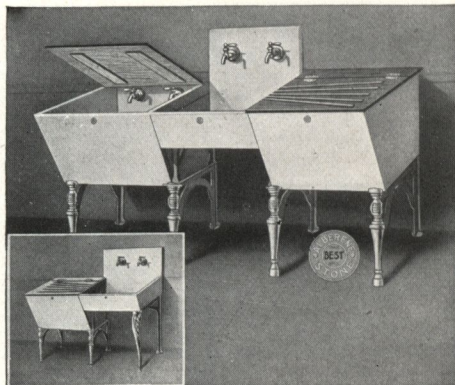


Plate 9340

Soapstone Combination Laundry Trays and Kitchen Sink with 12-inch Solid High Back, Plain Iron Legs, Hardwood Drain Board Cover and Brass Outlet Strainers, and Faucets.

Plate 9340. No. 1

Consisting of Single Tray and Sink, as described.

Width, 24 inches; length Tub, 24 inches; length Sink, 24 inches; total length, 48 inches.	Price.....	32.50
Width, 24 inches; length Tub, 30 inches; length Sink, 24 inches; total length, 54 inches.	Price.....	33.75
Width, 24 inches; length Tub, 24 inches; length Sink, 30 inches; total length, 54 inches.	Price.....	33.75
Width, 24 inches; length Tub, 30 inches; length Sink, 30 inches; total length, 60 inches.	Price.....	35.00

Plate 9340. No. 2

Consisting of Two-part Tray and Sink, as described.

Width, 24 inches; length Tubs, 48 inches; length Sink, 24 inches; total length, 72 inches.	Price.....	50.50
Width, 24 inches; length Tubs, 60 inches; length Sink, 24 inches; total length, 84 inches.	Price.....	53.50
Width, 24 inches; length Tubs, 48 inches; length Sink, 30 inches; total length, 78 inches.	Price.....	52.25
Width, 24 inches; length Tubs, 60 inches; length Sink, 30 inches; total length, 90 inches.	Price.....	55.00

All measurements are outside.

Note: On Combination No. 1, Sink can be placed on either right or left-hand side. On Combination No. 2, Sink can be placed on either right or left-hand side or in the center between the two Tubs.

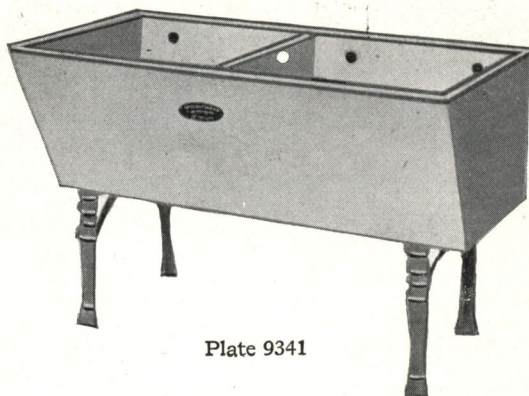


Plate 9341

Scotch Granite Laundry Trays

Plate 9341

Scotch Granite Laundry Trays with Heavy Zinc Protecting Rim, Twin Waste Connection, Plugs and Overflow, Plain Iron Legs.

Single		Two-part		Three-part	
Size 24 x 24 inches.....	6.50	Size 42 x 21 inches.....	9.25	Size 72 x 21 inches.....	14.50
Size 27 x 24 inches.....	6.75	Size 48 x 21 inches.....	9.25	Size 72 x 24 inches.....	15.00
Size 30 x 24 inches.....	7.50	Size 48 x 24 inches.....	9.50		
		Size 50 x 24 inches.....	11.25		
		Size 60 x 24 inches.....	12.50		

Add for Galvanized Iron Covers, per opening 1.25

Laundry Tray Covers

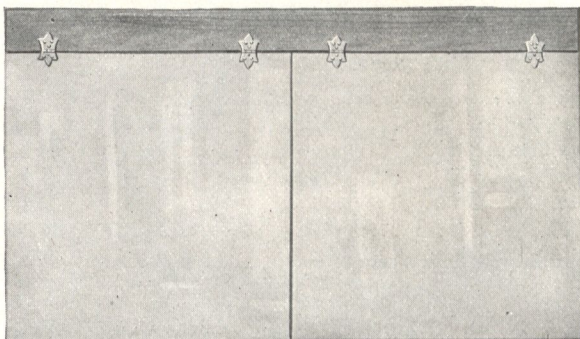


Plate 9350

Plate 9350

Two-part White Porcelain Enameled Steel Tray Covers.

24-inch Cover, per opening 3.50

Note: When ordering always state size, kind and style of Trays on which Covers are to be used.

These Covers are the last word in kitchen elegance, being pure white in color, strong, durable and absolutely sanitary. All kinds of cooking utensils and dishes can be placed on them without marring the surface.

Plate 9351

Hardwood Plain or Varnish Finished Laundry Tray Covers, with Wood Back Strip or Bent Hinges for Trays with Wood Top Frame.

24-inch Cover, per opening 2.50

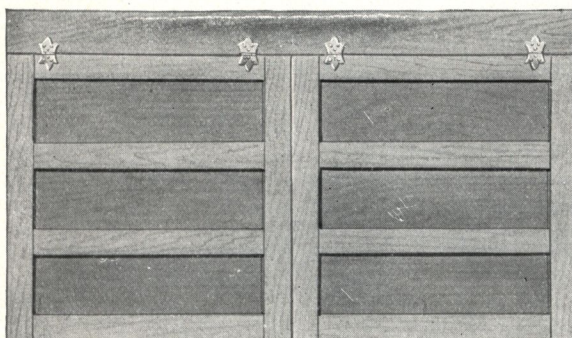


Plate 9351

Plate 9352

Galvanized Sheet Metal Laundry Tray Covers with Wood Back Strip or Bent Hinges for trays with wood top frame.

Single Cover, 24 x 24 inches, each 1.25

Two-part Cover, 24 x 48 inches, per set 2.50

Three-part Cover, 24 x 72 inches, per set 3.75

Covers can be furnished to order for Trays of other sizes.

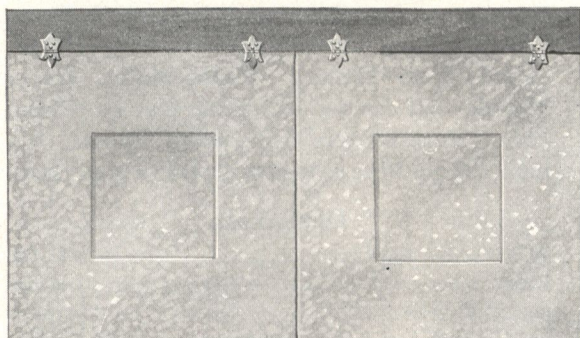


Plate 9352

Nason Drinking Fountains

Plate 9360

Heavy China Pedestal Drinking Fountain, with Supply and Waste through center of Pedestal, with Nickel-plated Self-closing Bubbling Device with China Cup, with Waste Strainer, Supply Pipe and Waste Pipe to floor.

Dimensions

Height, floor to top, inches.....	30	36
Outside diameter of Bowl, inches.....	11½	13¾
Inside diameter of bowl, inches.....	9	11¼
Depth of Bowl, inches.....	4	4
Diameter of Base, inches.....	15	18
As described.....	29.25	34.50

Can be furnished with Supply and Waste to wall.

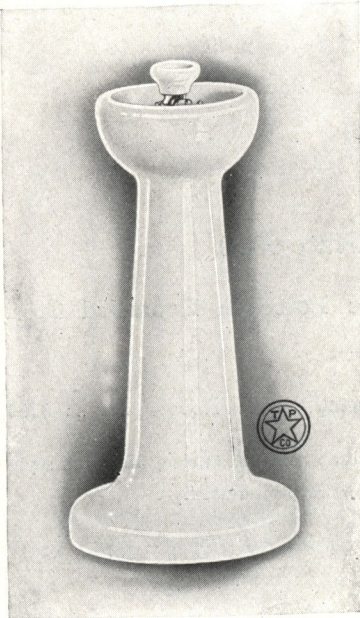


Plate 9360

Plate 9361

Vitreous Porcelain Drinking Fountain with Special Nickel-plated Wall Bracket, Self-closing Operating Ring and China Bubbling Cup, Outlet Strainer and Trap to Wall, Supply Pipe and Loose Key Control Valve.

Dimensions

Diameter of Bowl, inside.....	10 inches
Diameter of Bowl, outside.....	13 inches
Depth of Bowl, inside.....	3¾ inches
Wall to front of Bowl.....	16¾ inches
As described.....	48.00

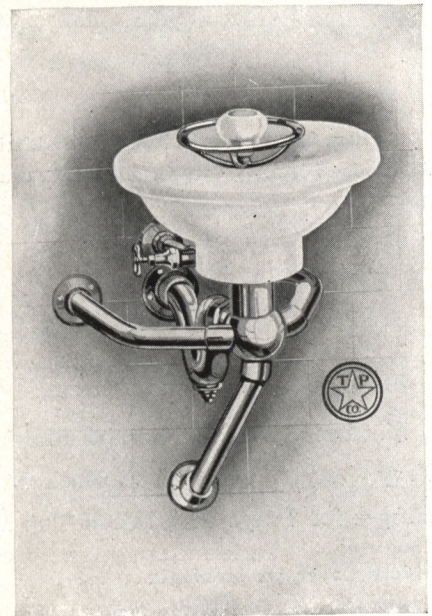


Plate 9361

Plate 9362

Heavy China Wall Drinking Fountain with Integral China Trap and Concealed Brass Waste Fitting for 1½-inch Iron Pipe, Concealed Iron Hanger, Nickel-plated Lever Handle Self-closing Bubbling Device, China Index Push-button Self-closing Faucet, ¾-inch Supply Pipe to wall with Loose Key Stop.

Dimensions

Width across Back.....	18 inches
Front to back.....	14 inches
Height of Back.....	6 inches
Depth inside.....	3¼ inches
As described.....	40.00

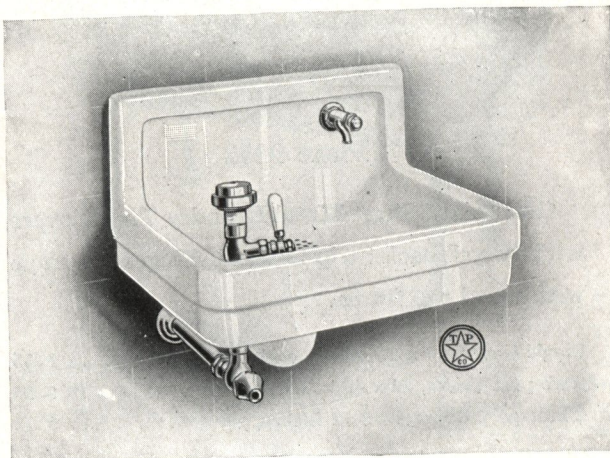


Plate 9362

Nason Drinking Fountains

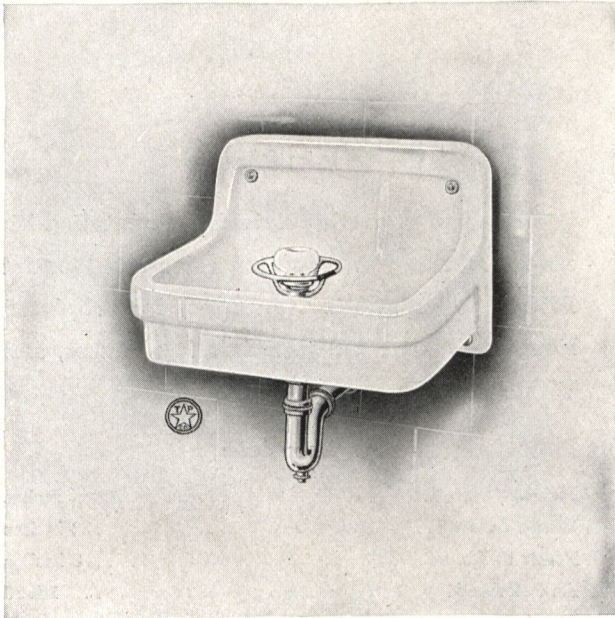


Plate 9370

Plate 9370

Heavy China Wall Drinking Fountain, secured to wall with screws, Nickel-plated Self-closing Operating Ring and China Bubbling Cup, Waste Strainer and Combined Supply and Waste Trap to wall, with Loose Key Shut-off.

Dimensions

Width across.....	10 inches
Wall to Front.....	12 inches
Height of Back.....	4 inches
As described.....	21.00

Plate 9371

Heavy China Wall Drinking Fountain with Integral China Trap and Concealed Brass Outlet Fitting for 1¼-inch Iron Pipe, secured to wall by Concealed Hanger, Nickel-plated Push-button Self-closing Bubbling Device with China Cup, Stream Regulator and Supply Pipe to wall with Loose Key Stop.

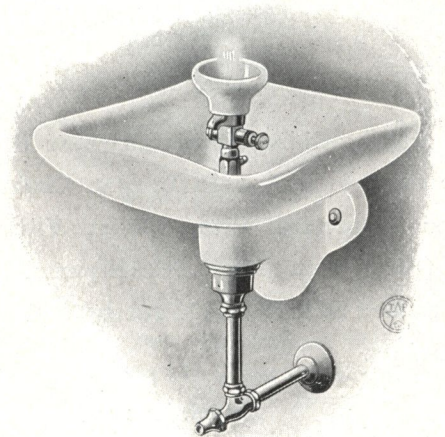


Plate 9371

Dimensions

Bowl, outside.....	13½ x 13½ inches
Depth of Bowl.....	3½ inches
Diameter of China Cup.....	4½ inches

This Fountain has Spout for filling glass.

As described.....	27.00
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Nason Drinking Fountains

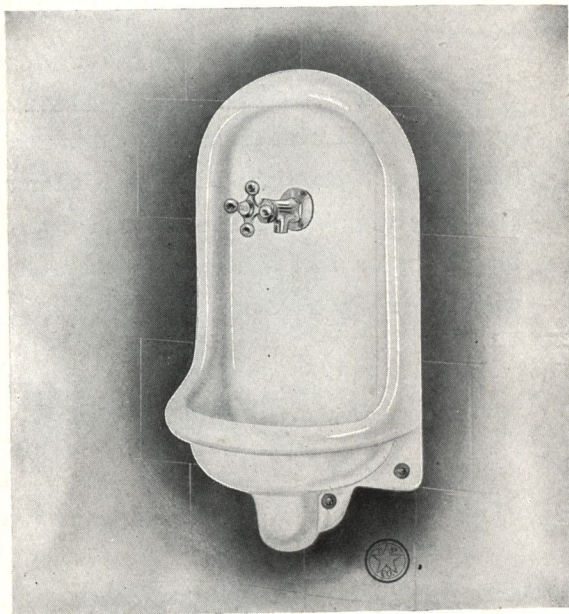


Plate 9380

Plate 9380

Heavy China Wall Drinking Fountain with Integral China Trap and Concealed Brass Outlet Fitting for $1\frac{1}{4}$ -inch Iron Pipe, Nickel-plated Four-arm China Index Self-closing Faucet, and Waste Strainer.

Dimensions

Height over all.....	23 $\frac{1}{4}$ inches
Width over all.....	12 inches
Front to Back.....	8 inches
As described.....	16.00

Plate 9381

Heavy China Recess Drinking Fountain to tile into wall, with Integral China Trap, and Concealed Brass Outlet Fitting for $1\frac{1}{4}$ -inch Iron Pipe; Nickel-plated Crown Handle Self-closing Faucet and Waste Strainer.

Dimensions

Height over all.....	21 inches
Width over all.....	15 inches
Front to wall.....	8 $\frac{3}{4}$ inches
Recess into wall.....	3 $\frac{1}{2}$ inches
As described.....	24.00



Plate 9381

Nason Drinking Fountains

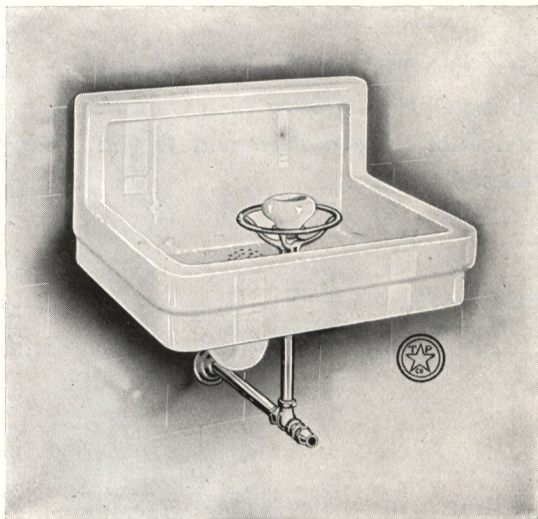


Plate 9390

Plate 9391

Heavy China Wall Drinking Fountain on Concealed Hangers, with Nickel-plated Self-closing Operating Ring and China Bubbling Cup, Outlet Strainer with Combined Supply and Waste Trap to wall, with Loose Key Control Valve.

Dimensions

Width across Back.....	18 inches
Front to Back.....	14 inches
Height of Back.....	7 inches
As described.....	30.75

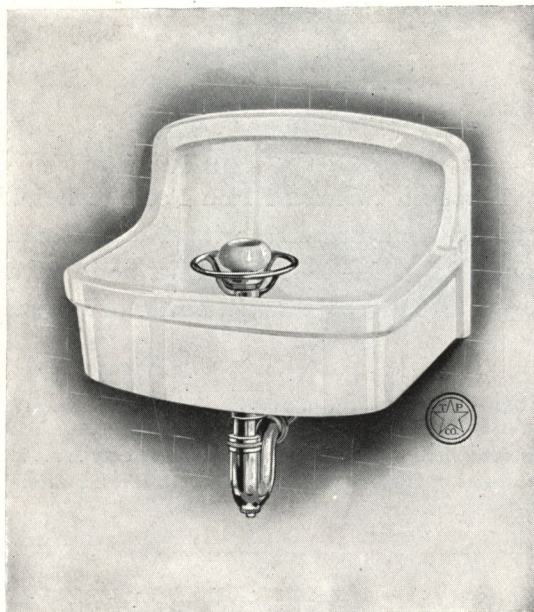


Plate 9391

Plate 9392

Heavy Solid Porcelain Double Drinking Fountain, to tile into wall recess, with Two Nickel-plated China Tip Cross Handle Special Fountain Faucets, Outlet Strainer and Coupling.

Dimensions

Width along wall.....	34½ inches
Height over all.....	21 inches
Front to Back over all.....	13½ inches
Face of wall to Front.....	5½ inches
Depth of Basin.....	3 inches
As described, Class A.....	42.50
As described, Class B.....	33.00

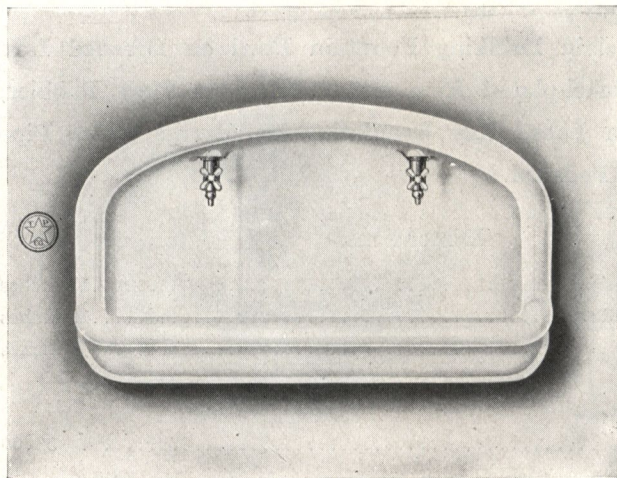


Plate 9392

Nason Drinking Fountains

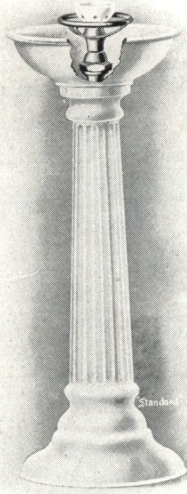


Plate 9400

Plate 9400

Porcelain Enameled Iron Pedestal Drinking Fountain, with Nickel-plated Self-closing Operating Ring with China Bubbling Cup, and Galvanized Iron Supply Pipe and Outlet Fitting through center of Pedestal to floor.

Prices

Height, inches.....	30	36
As described, Enameled all over.....	28.00	31.00
As described, with outside of Bowl and Pedestal painted white.....	24.50	27.50

Plate 9401

Porcelain Enameled Iron Pedestal Drinking Fountain on White Painted Iron Pedestal, with Nickel-plated Self-closing Operating Ring with China Bubbling Cup, and Galvanized Iron Supply Pipe and Outlet Fitting through center of Pedestal to floor.

Prices

Height, inches.....	24	30	36
As described, with Bowl Enameled all over.....	22.50	23.00	24.00
As described, with Bowl Enameled inside only.....	21.00	21.50	22.50
Diameter of Bowl outside, 11 inches; inside, 8 inches.			

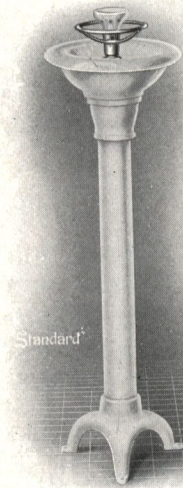


Plate 9401

Plate 9402

Vitreous Porcelain Drinking Fountain Bowl on Bronzed Iron Pedestal with Nickel-plated Ring and Continuous Flow Bubbler, Supply Pipe with Loose Key Regulating Valve and Waste Pipe through center of Pedestal.

Dimensions

Diameter of Bowl outside.....	13 inches
Diameter of Bowl inside.....	10 inches
Height, floor to top.....	30½ inches

Price

As described.....	33.00
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Plate 9402

Nason Drinking Fountains

Plate 9410

Extra Heavy Vitreous China Roll Rim Drinking Fountain Bowl on Galvanized Iron Pedestal, with Nickel-plated Lever Handle Self-closing Non-squirting Bubbling Head, with Galvanized Iron Supply Pipe and Waste to floor with Special Tee Connection.

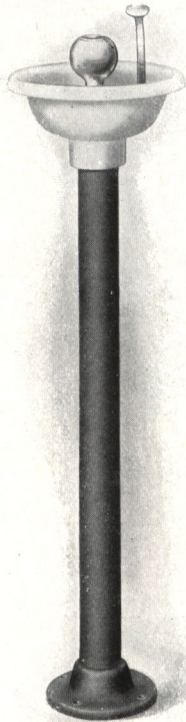


Plate 9410

Dimensions

Height, floor to Top.....	36 inches
Outside diameter of Bowl.....	9½ inches
Inside diameter of Bowl.....	7½ inches
As described.....	15.00

Plate 9411

Porcelain Enameled Iron Roll Rim Drinking Fountain on Painted Iron Wall Brackets with Plate 9420 Bubbling Device with Vitreous China Cup and Push-button Self-closing Operating Valve and Loose Key Stream Regulator, Nickel-plated Waste Strainer and Half S Trap to wall with Outlet for iron pipe.

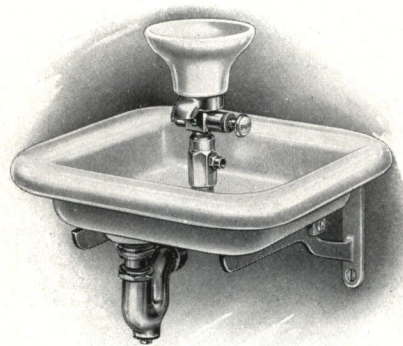


Plate 9411

Price

As described, with exterior of Bowl painted white.....	15.00
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Dimensions

Enameled Catch Basin 12 inches square.
This Fountain has a Spout for filling individual drinking cup

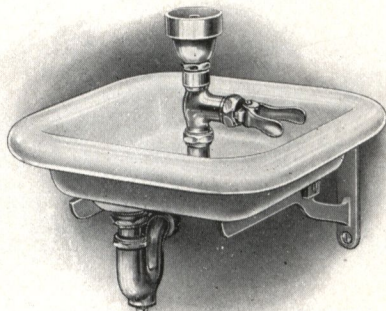


Plate 9412

Plate 9412

Porcelain Enameled Iron Roll Rim Drinking Fountain on Painted Wall Brackets, with Nickel-plated Self-closing Non-squirting Bubbling Device, Waste Strainer and Half S Trap to wall with Outlet for Iron Pipe.

Price

As described, with exterior of Bowl painted white.....	15.00
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Dimensions

Enameled Catch Basin 12 inches square.

Nason Drinking Fountains

Plate 9420

Nickel-plated Bubble Drinking Fountain for Bottom Supply, with Porcelain Catch Basin, Push-button Operating Device and Loose Key Stream Regulator.

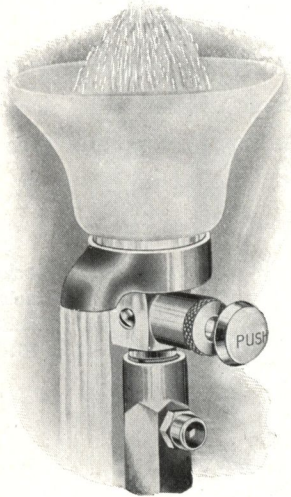


Plate 9420

Plate 9421

Same as Plate 9420, except that it has Nickel-plated Catch Basin.

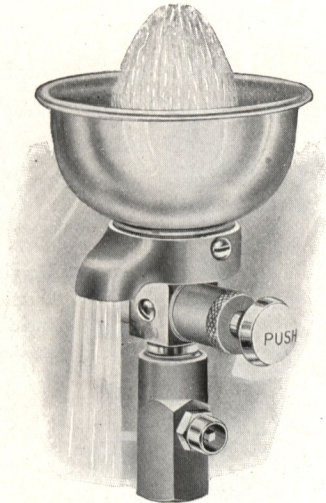


Plate 9421

Either of these Fountains can be installed in any receptor where supply comes up through the bottom. They are of the non-squirting type and have spout for filling individual drinking cups.

Measures $4\frac{3}{4}$ inches from bottom of Shank to top of Catch Basin. Threaded for $\frac{1}{2}$ -inch iron pipe.

Plate 9420-9421, as described, each..... 4.50

Plate 9422

Nickel-plated Bubble Drinking Fountain for Back Supply with Nickel-plated Catch Basin, Push-button Operating Device and Loose Key Stream Regulator.

Can be installed in any receptor where supply comes through back. Is of the non-squirting type and has spout for filling individual drinking cups. Measures $3\frac{7}{8}$ inches from center of Bubbler to end of Shank.

Threaded for $\frac{1}{2}$ -inch iron pipe.

Plate 9422, as described, each..... 4.50

Furnished with Porcelain Catch Basin at same price.

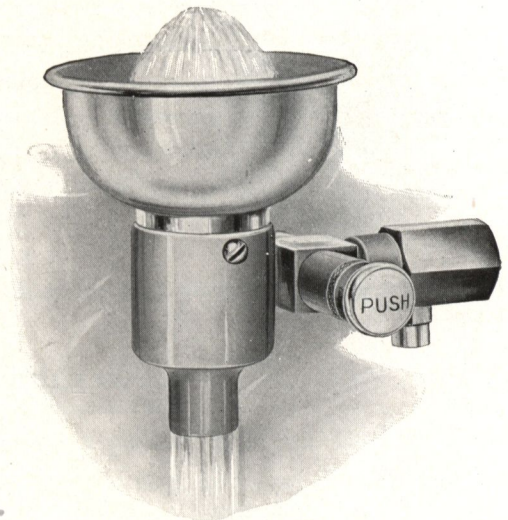


Plate 9422

Plate 9423

Nickel-plated Cast Brass Non-squirting Bubbling Drinking Fountain Head, with Self-closing Lever Handle and Connection for $\frac{1}{2}$ -inch iron pipe.

Plate 9423, as described, each..... 6.00

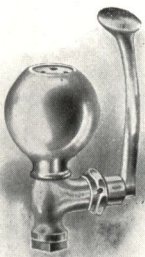


Plate 9423

Nason Drinking Fountains

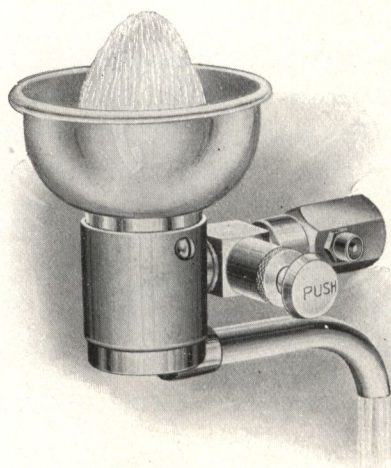


Plate 9430

Plate 9430

Nickel-plated Bubble Drinking Fountain for back supply, with Nickel-plated Catch Basin, Push-button Operating Device, Loose Key Stream Regulator, and Spout on the Outlet to carry the water to the back of the Receptor to prevent splashing, and can also be used for filling individual drinking cups.

Is of the non-squirting type and threaded for $\frac{1}{2}$ -inch iron pipe. Measures $3\frac{7}{8}$ inches from center of Bubbler to end of shank.

Plate 9430, as described, each..... 5.00
Furnished with Porcelain Catch Basin at same price.

Plate 9431

Nickel-plated Bubble Drinking Fountain with Flange for Back Supply, Nickel-plated Catch Basin, and Push-button Operating Device of the Non-squirting type, and Loose Key Stream Regulator.

Measures $6\frac{1}{2}$ inches from center of Bubbler to back of Flange. Threaded for $\frac{1}{2}$ -inch iron pipe.

Plate 9431, as described, each..... 6.00
Furnished with Porcelain Catch Basin at same price.

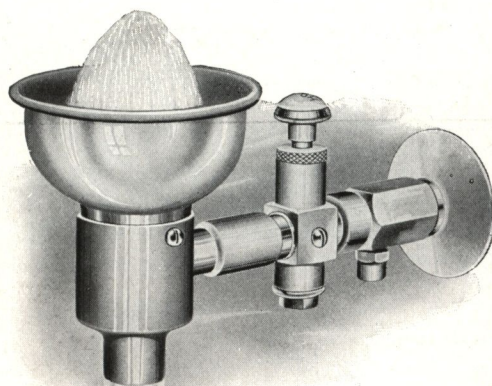


Plate 9431

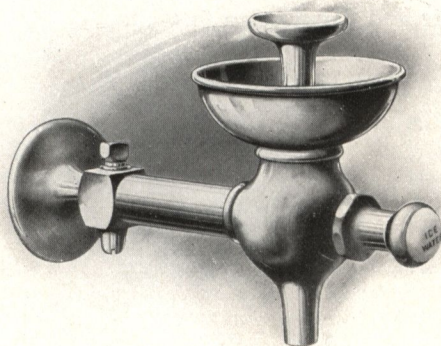


Plate 9432

Plate 9432

Nason Unit Nickel-plated Brass Drinking Fountain and Bubbling Head for back supply, with Push-button Operating Device and Integral Regulating Shut-off flanged for $\frac{1}{2}$ -inch iron pipe.

Plate 9432, as described, each..... 12.00

Nason Drinking Fountains

Plate 9440

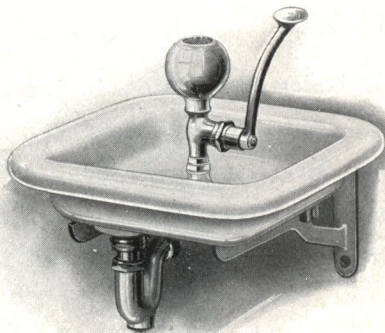


Plate 9440

Porcelain Enameled Iron Drinking Fountain on Painted Iron Wall Brackets, with Plate 9423 Nickel-plated Lever Handle Self-closing Non-squirting Bubbling Device, Outlet Strainer and Half S Trap to wall.

Dimensions

12 inches square

Price

As described..... 17.00

Exterior of Catch Basin painted white.

This Fountain can be fitted with any style of Bubbler desired.

Plate 9441

Porcelain Enameled Iron Roll Rim Drinking Fountain Bowl on Galvanized Iron Wall Bracket, with Plate 9423 Nickel-plated Lever Handle Self-closing Non-squirting Bubbling Device, with Rough Brass Combination Supply and Waste Fitting, with Loose Key Angle Control Valve and Galvanized Iron Supply Pipe to wall.

Dimensions

Diameter of Bowl, outside..... $8\frac{3}{4}$ inches
 Diameter of Bowl, inside..... 7 inches
 Depth of Bowl, inside..... $3\frac{1}{4}$ inches

Price

As described..... 20.00

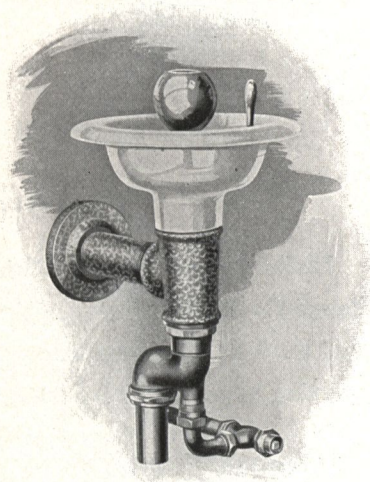


Plate 9441

Plate 9442

Porcelain Enameled Iron One-piece Drinking Fountain on Concealed Wall Hanger, with Nickel-plated Self-closing Faucet, Waste Strainer and Connection to wall.

Dimensions

Height..... $16\frac{3}{4}$ inches
 Width..... $12\frac{1}{2}$ inches
 Depth, front to back..... $14\frac{1}{2}$ inches

Prices

As described..... 14.00
 If without Self-closing Faucet, deduct..... 1.50



Plate 9442

Nason Drinking Fountains



Plate 9450

Plate 9450

Porcelain Enameled Iron One-piece Drinking Fountain, with 12-inch Back, supported on Painted Iron Brackets, with Two Nickel-plated Ring Operating Self-closing Bubbling Devices with China Cups, $\frac{3}{8}$ -inch Supply Pipe with Loose Key Stop, and $1\frac{1}{2}$ -inch Half S Trap to wall.

Dimensions

Length of Trough.....36 inches
Width of Trough.....12 inches

Prices

Enameled all over, as described..... 50.00
Enameled inside, as described..... 47.50

Plate 9451

Porcelain Enameled Iron Roll Rim Drinking Fountain on Painted Iron Brackets, with Nickel-plated Ring Operating Self-closing Bubbling Device, with China Cups, $\frac{3}{8}$ -inch Supply Pipe with Loose Key Stop and $1\frac{1}{2}$ -inch Half S Trap to wall.

Length, inches.....	30	42	54
Width, inches.....	12	12	12
Enameled all over, as described	40.50	54.00	66.00
Enameled inside, as described..	37.50	41.50	62.00
Number of Cups.....	2	3	4

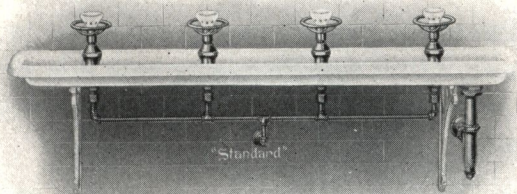


Plate 9451

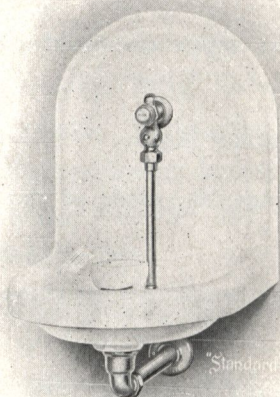


Plate 9452

Plate 9452

Porcelain Enameled Iron One-piece Drinking Fountain on Concealed Wall Hanger, with Nickel-plated Push-button Self-closing Operating Device and China Bubbling Cup, Waste Strainer and Connection to wall.

Dimensions

Height..... $16\frac{3}{4}$ inches
Width..... $12\frac{1}{2}$ inches
Depth, back to front..... $14\frac{1}{2}$ inches

Price

As described..... 20.00

Nason Quatern Line

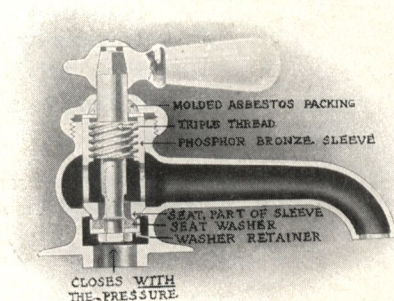


Fig. 9460

Quatern Faucet Construction

The Nason Quatern Faucets shown on the following pages all meet with instant approval—first, because of their superior quality both in workmanship and construction, and secondly, because it is the one quick-compression construction that is mechanically correct, and that appeals to practical people.

The main, the distinctive feature of the Quatern Line that puts it in a class by itself, is the fact that it closes with the pressure. It cannot open automatically under any pressure, nor can it hammer or pound. The above drawing shows this clearly and also illustrates the other features.

All Quatern Faucets are identical in construction with the Basin Cock shown above.

The following are some of the special features that make the Quatern Line a leader and insure successful operation and pleased customers.

Operation—Opens to full flow on one-eighth turn of handle. Comes to stop at one-quarter turn. Closes with the pressure, not against it.

Metal—Castings are of best red brass, except the sleeve, which is phosphor bronze.

Working Parts—Few in number, accurately machined, and interchangeable, made of the best material. No moving part bears on the body.

Seat Removable—The seat is a part of the sleeve, which is cast of phosphor bronze, greatly increasing life of seat. The sleeve seat is removable.

Location of Handle—The handle can be placed in any position by simply loosening the cap. As regularly assembled, the handles close to the side and open to the front.

Appearance—Plain, but artistic and beautiful.

Quaturn Combination Kitchen and Pantry Sink Faucets

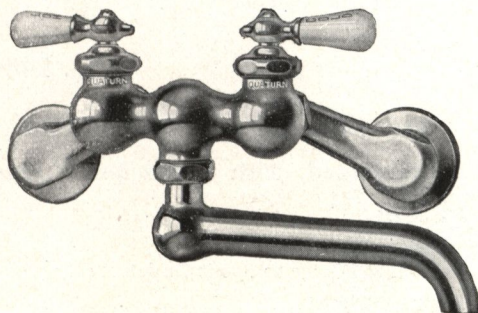


Fig. 9470

No. 100 Quaturn Standard Mixing Faucet with Swinging Spout, for kitchen and pantry sinks. Nickel-plated, with China Index Handles. Connections for $\frac{1}{2}$ -inch or $\frac{3}{4}$ -inch iron pipe, male or female.

No. 1 Inlet Connections, adjustable from 4 to $8\frac{3}{8}$ inches center to center, each	10.60
No. 2 Inlet Connections, adjustable from 4 to $10\frac{3}{8}$ inches center to center, each	11.10
No. 3 Inlet Connections, adjustable from 4 to $12\frac{3}{8}$ inches center to center, each	12.00

Spout has a radius of 6 inches.

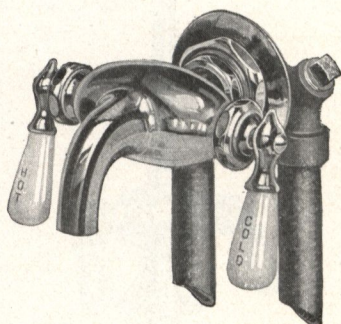


Fig. 9471

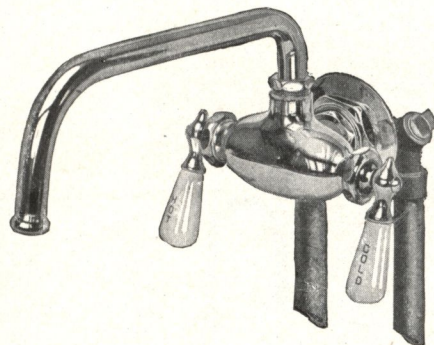


Fig. 9472

No. 1400 Quaturn Combination Mixing Faucet, with Solid Spout, for kitchen and pantry sinks. Nickel-plated, with China Index Handles, and Patent Supply Pipe Fitting tapped for $\frac{1}{2}$ -inch iron pipe and measures $2\frac{1}{2}$ inches center to center.

Back of Sink to center of Spout	$4\frac{1}{2}$ inches
Width of Faucet over all	$6\frac{1}{2}$ inches

Sink back should be drilled with one central hole $1\frac{7}{8}$ inches in diameter.

Specify kind of sink wanted for.

As described, each	11.70
--------------------------	-------

No. 1500 Quaturn Combination Mixing Faucet with Swinging Spout, for kitchen and pantry sinks. Nickel-plated, with China Index Handles, and Patent Supply Pipe Fitting tapped for $\frac{1}{2}$ -inch pipe and measures $2\frac{1}{2}$ inches center to center.

Back of Sink to center of Spout	$10\frac{1}{2}$ inches
Radius of Spout	.8 inches
Width of Faucet over all	$6\frac{1}{2}$ inches

Sink back should be drilled with one central hole $1\frac{7}{8}$ inches in diameter.

Specify kind of sink wanted for.

As described, each	14.70
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Quatern Pantry Sink Faucets

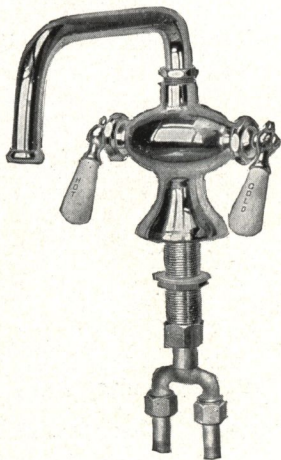


Fig. 9480

Fig. 9480

No. 1800 Quatern Double Pantry Cock with Swinging Spout, Nickel-plated, with China Index Handles, $\frac{1}{4}$ -inch Iron Pipe Tail Pieces.

Bottom of Flange to Spout Outlet.....	$3\frac{1}{4}$ inches
Radius of Spout.....	.8 inches
Width of Faucet over all.....	$6\frac{1}{2}$ inches
Diameter of Flange.....	$2\frac{5}{8}$ inches
Diameter of Shank.....	1.05 inches
Bottom of Flange to end of Tail Pieces.....	$7\frac{1}{2}$ inches
Center to center of Tail Pieces.....	$1\frac{3}{4}$ inches
As described, each.....	15.30

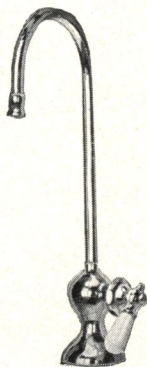


Fig. 9481

No. 1600 Quatern Single Pantry Cock with Gooseneck Spout, Nickel-plated, with China Index Handles, $\frac{1}{4}$ -inch Iron Pipe Tail Piece.

Bottom of Flange to Spout Outlet.....	10 inches
Diameter of Flange.....	$2\frac{1}{8}$ inches
Center of Cock to center of Spout Outlet.....	5 inches
As described, per dozen.....	58.30

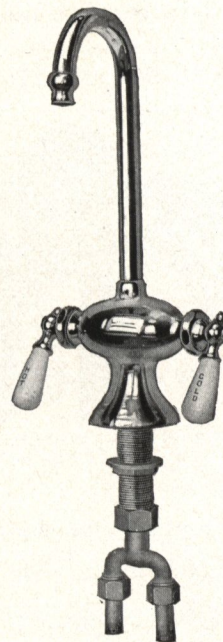


Fig. 9482

No. 1700 Quatern Double Pantry Cock with Gooseneck Spout, Nickel-plated, with China Index Handles, $\frac{1}{4}$ -inch Iron Pipe Tail Pieces.

Bottom of Flange to Spout Outlet.....	10 inches
Diameter of Flange.....	$2\frac{5}{8}$ inches
Diameter of Shank.....	1.05 inches
Center to center of Tail Pieces.....	$1\frac{3}{4}$ inches
As described, each.....	14.70

Quatern Basin Cocks

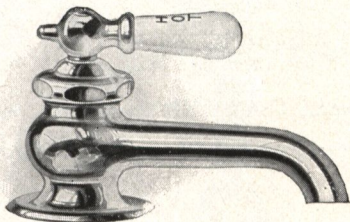


Fig. 9490

No. 1900 Quatern Top Handle Basin Cock,
 Nickel-plated, with China Index Handles and
 1/4-inch Iron Pipe Tail Piece.

As described, per dozen..... 36.90

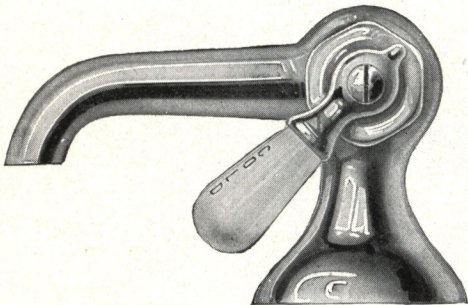


Fig. 9491

No. 2000 Quatern Side Handle Basin Cock,
 Nickel-plated, with China Index Handle and
 1/4-inch Iron Pipe Tail Piece.

As described, per dozen..... 46.70

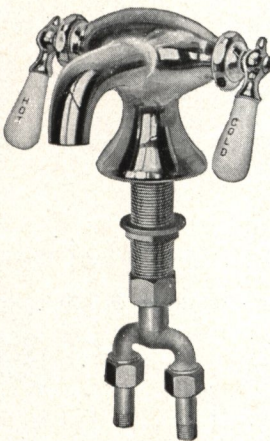


Fig. 9492

No. 2100 Quatern Double Basin Cock, Nickel-plated, with China Index Side Handles
 and 1/4-inch Iron Pipe Tail Pieces

Diameter of Flange.....	2 5/8 inches
Diameter of Shank.....	1.05 inches
Width of Faucet over all.....	6 1/2 inches
Center to center Tail Pieces.....	1 3/4 inches
As described, each.....	11.50

Quaturn Lavatory Fixtures

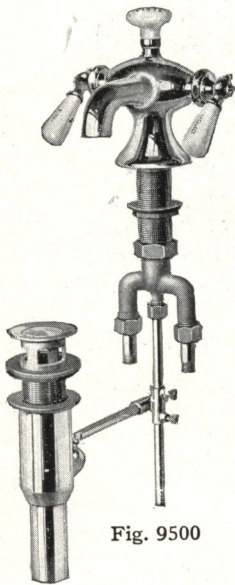


Fig. 9500

Fig. 9500

No. 2200 Quaturn Double Basin Cock, Nickel-plated, with China Index Side Handles, and Perfecto Pop-up Waste, with China Waste Knob.

Center of Cock to center of Spout Outlet.....	4 $\frac{1}{4}$ inches
Center to center of Tail Pieces	2 $\frac{1}{2}$ inches
Diameter of Flange.....	2 $\frac{5}{8}$ inches
Diameter of Shank.....	1 $\frac{1}{4}$ inches
Width of Faucet over all.....	6 $\frac{1}{2}$ inches
As described, each.....	24.75

Fig. 9501

No. 2300 Perfecto Pop-up Waste with China Waste Knob. Indirect-action; raising Knob closes Plug, lowering Knob opens Plug.

Diameter of Flange under Waste Knob.....	1 $\frac{3}{4}$ inches
Diameter of Flange inside of Bowl.....	2 $\frac{1}{8}$ inches
Diameter of Flange below Bowl.....	2 $\frac{3}{8}$ inches
Outside diameter of Outlet Tube.....	1 $\frac{1}{4}$ inches

The Perfecto Waste is sanitary, the waste plug can be removed and cleaned without touching other parts. It is simple and mechanically correct. It is easily adjusted for friction on lift rod; it is also reversible and can be readily changed from indirect to direct action if desired.

As described, each..... 7.10

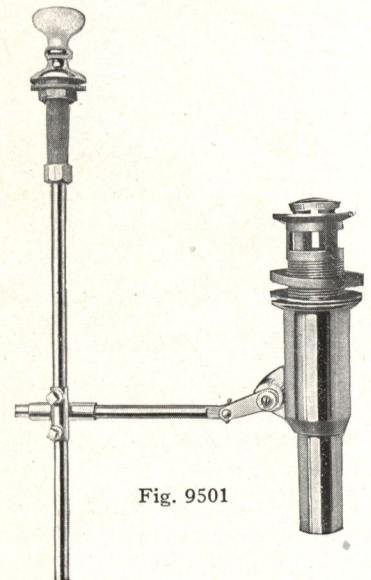


Fig. 9501

Quatern Shampoo Cocks

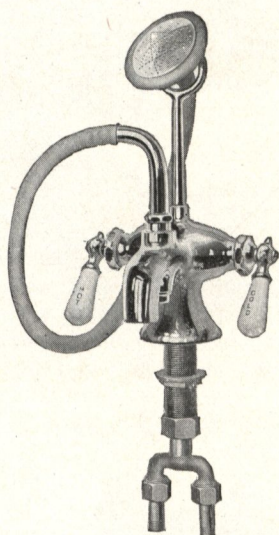


Fig. 9510

No. 2500 Quatern Combination Double Shampoo and Basin Cock, Nickel-plated, with China Index Handles, Hose and Sprinkler

Diameter of Flange.....	2 $\frac{5}{8}$ inches
Diameter of Shank.....	1.05 inches
Center to center of Tail Pieces.....	1 $\frac{3}{4}$ inches
As described, each.....	23.05

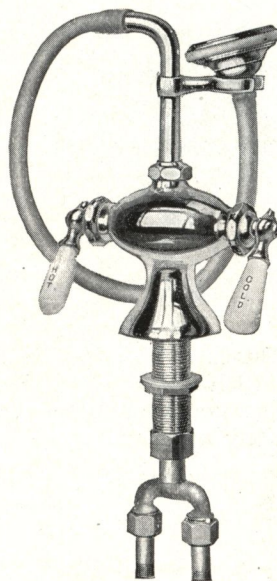


Fig. 9511

No. 2600 Quatern Double Shampoo Cock, Nickel-plated, with China Index Handles, Hose and Sprinkler

Diameter of Flange.....	2 $\frac{5}{8}$ inches
Diameter of Shank.....	1.05 inches
Center to center of Tail Pieces.....	1 $\frac{3}{4}$ inches
As described, each.....	16.95

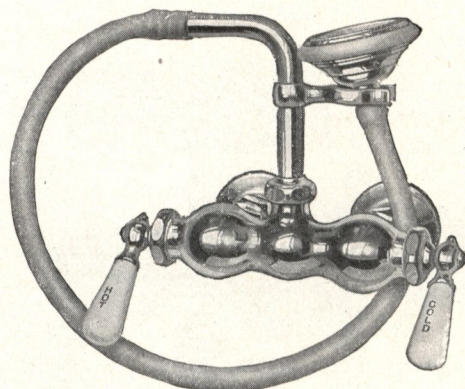


Fig. 9512

No. 2700 Quatern Wall Shampoo Cock, Nickel-plated, with China Index Handles, Hose and Sprinkler, Connections for $\frac{1}{2}$ -inch Iron Pipe, female.

Center to center of Supplies.....	3 $\frac{3}{8}$ inches
Diameter of Flanges.....	2 $\frac{1}{4}$ inches
Width of Faucet over all.....	8 $\frac{1}{4}$ inches
As described, each.....	10.65

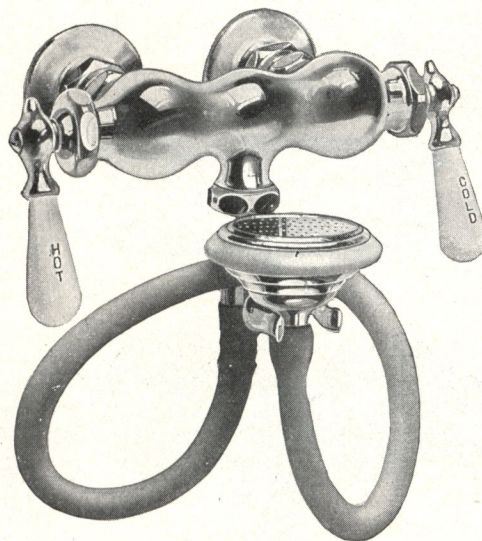


Fig. 9513

No. 2800 Quatern Wall Shampoo Cock, Nickel-plated, with China Index Handles, Hose and Sprinklers, Connections for $\frac{1}{2}$ -inch Iron Pipe, female.

Center to center of Supplies.....	3 $\frac{3}{8}$ inches
Diameter of Flanges.....	2 $\frac{1}{4}$ inches
Width of Faucet over all.....	8 $\frac{1}{4}$ inches
As described, each.....	10.35

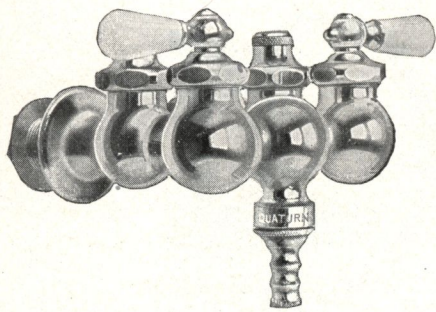


Fig. 9520

No. 3300 Quatern Top Handle Bath Cock, Nickel-plated, with China Index Handles, and Integral Compression Stop Shut-offs in Shank, and Nickel-plated Ball Elbows.

3 $\frac{3}{8}$ -inch Centers

As described, each..... 13.05

Quatern Bath Cocks

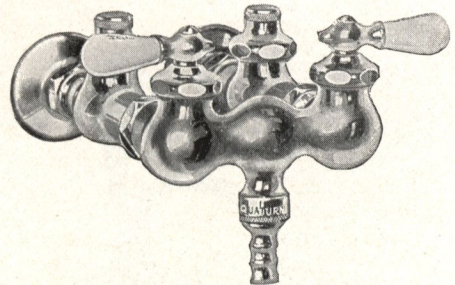


Fig. 9521

No. 3400 Quatern Top Handle Bath Cock for tiled-in tubs, Nickel-plated, with China Index Handles, and Integral Compression Stop Shut-offs in Shanks, Connections for $\frac{1}{2}$ -inch iron pipe, female.

3 $\frac{3}{8}$ -inch Centers

As described, each..... 11.45

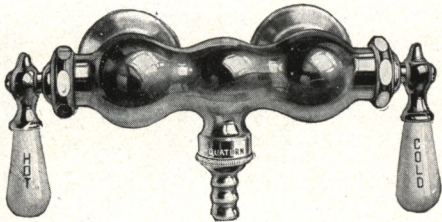


Fig. 9522

No. 3500 Quatern Side Handle Bath Cock, Nickel-plated, with China Index Handles and Nickel-plated Ball Ells.

3 $\frac{3}{8}$ -inch Centers

As described, each..... 10.95

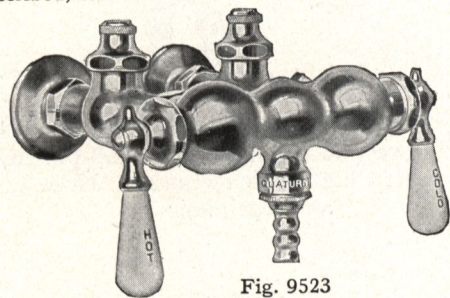


Fig. 9523

No. 3600 Quatern Side Handle Bath Cock, for tiled-in tubs, Nickel-plated, with China Index Handles, and Integral Compression Stop Shut-offs in Shanks, Connections, $\frac{1}{2}$ -inch iron pipe, female.

3 $\frac{3}{8}$ -inch Centers

As described, each..... 12.40

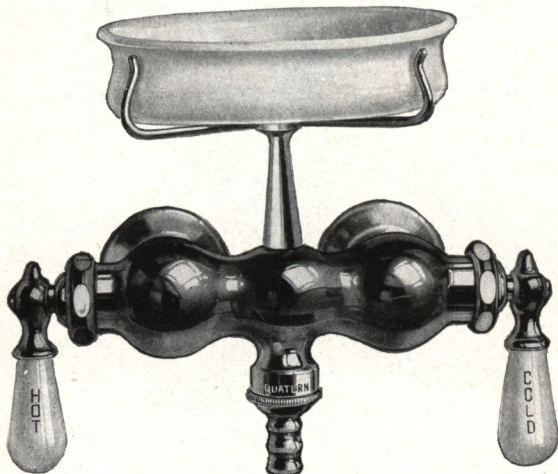


Fig. 9524

No. 3700 Quatern Side Handle Bath Cock, Nickel-plated, with China Index Handles and China Soap Dish, and N. P. Ball Ells.

3 $\frac{3}{8}$ -inch Centers

As described, each..... 12.80
Add for Integral Stops, each..... 3.05

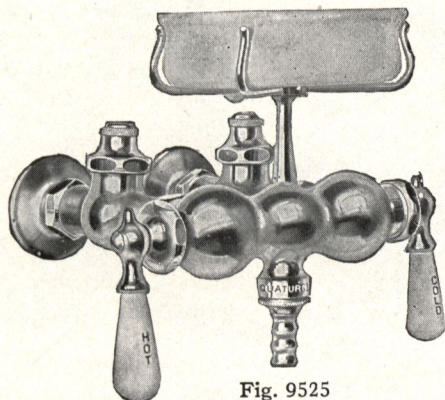


Fig. 9525

No. 3800 Quatern Side Handle Bath Cock, for tiled-in tubs, Nickel-plated, with China Index Handles, China Soap Dish and Integral Compression Stop Shut-offs in Shanks, Connections for $\frac{1}{2}$ -inch iron pipe, female.

3 $\frac{3}{8}$ -inch Centers

As described, each..... 14.25

Quatern Faucet and Special Fitting for Factory Wash Sink

Fig. 9530

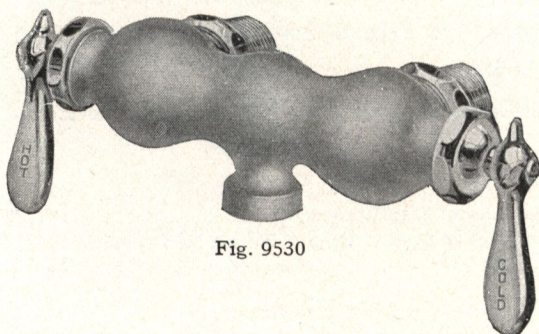


Fig. 9530

No. 3000 Quatern Mixing Faucet for factory wash sinks, Rough Nickel-plated, with Nickel-plated Brass Index Handles and Concealed Flow Reducers, Connections for $\frac{3}{4}$ -inch iron pipe, male.

Center to center of Cock Hole.....	$3\frac{3}{8}$ inches
Width of Faucet over all.....	$8\frac{1}{4}$ inches
End of Tail Piece to center of Spout.....	$2\frac{1}{4}$ inches
As described, each.....	7.20
With Flanged Connections for $\frac{1}{2}$ -inch iron pipe, female (for sinks with back).....	8.25

Fig. 9531

No. 3100 Galvanized Malleable Iron Fitting for faucet on factory wash sinks. Each Fitting supplies two faucets. Connections for $\frac{3}{4}$ -inch iron pipe faucets.

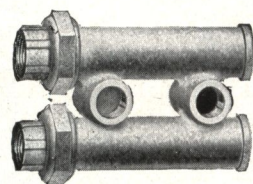


Fig. 9531

Measurements

Length over all with 1-inch Unions.....	$7\frac{1}{2}$ inches
Length over all with $\frac{3}{4}$ -inch Unions.....	$7\frac{1}{4}$ inches
Length over all, $\frac{3}{4}$ -inch R. and L., no Unions.....	$6\frac{1}{4}$ inches
Width of $\frac{3}{4}$ and 1-inch styles.....	$2\frac{1}{4}$ inches
Center to center Supply Pipes, 1-inch style.....	3 inches
Center to center Supply Pipes, $\frac{3}{4}$ -inch style.....	$2\frac{1}{2}$ inches

Prices

With Unions, as shown, for 1-inch Supply Pipes, each.....	3.55
With Unions, as shown, for $\frac{3}{4}$ -inch Supply Pipes, each.....	3.10
Without Unions, tapped right and left for $\frac{3}{4}$ -inch Supply Pipes, each.....	2.20

Quatern Sink Bibb

Fig. 9532

No. 1100 Quatern Sink Bibb, Nickel-plated, with Nickel-plated Indexed Handle, Female Flange for iron pipe, Solid Shank with Integral Stop.

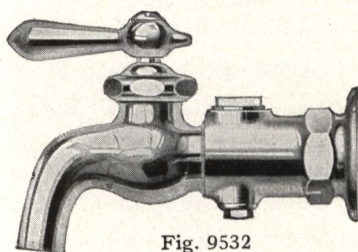


Fig. 9532

$\frac{1}{2}$ -inch, Plain, per dozen.....	55.15
$\frac{1}{2}$ -inch, Hose, per dozen.....	59.60
$\frac{5}{8}$ -inch, Plain, per dozen.....	58.95
$\frac{5}{8}$ -inch Hose, per dozen.....	63.35
If with China Index Handles, add.....	1.50

Quatern Mixing Faucet

Fig. 9540

No. 2900 Quatern Mixing Faucet with Quatern Stop (for showers), Nickel-plated, with China Index Handles, Connections for $\frac{1}{2}$ -inch Iron Pipe, Female, Stop Cock Outlet tapped $\frac{1}{2}$ -inch Iron Pipe, Female.

Can also be furnished with $\frac{1}{2}$ -inch Union in place of Stop Cock.

$3\frac{3}{8}$ -inch Centers

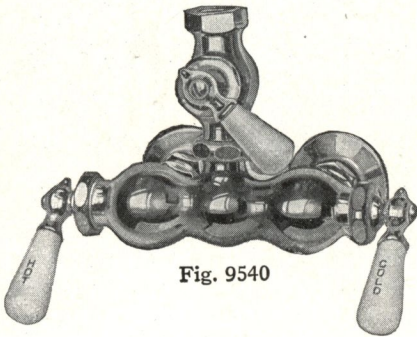


Fig. 9540

As shown, each.....	12.75
With $\frac{1}{2}$ -inch Union in place of Stop Cock, each.....	10.75
With $\frac{1}{2}$ -inch Union in place of Stop Cock, and Rough Nickel-plated with Brass Handle, each.....	10.25

Shower Stops and Garage Cocks

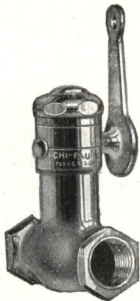


Fig. 9541

No. 5900 Self-closing Shower Stop with Handle for Chain or Push Rod.

$\frac{1}{2}$ -inch, Finished Nickel-plated, per dozen.....	36.85
$\frac{1}{2}$ -inch, Rough Brass, per dozen.....	32.10

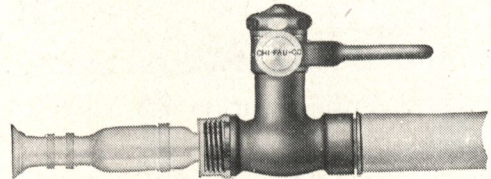


Fig. 9542

No. 5600 Rough Nickel-plated Garage Cock for $\frac{3}{4}$ -inch Hose; self-closing.

Cock only, each.....	3.15
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Self-closing Basin Cocks

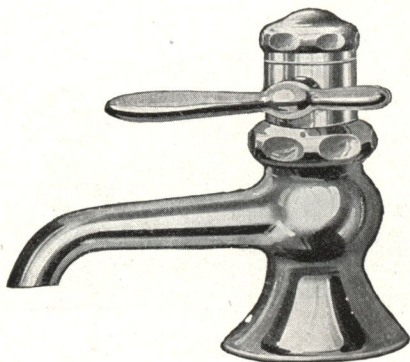


Fig. 9543

No. 4300 Nickel-plated Lever Handle Self-closing Basin Cock, with $\frac{1}{4}$ -inch Iron Pipe Tail-piece.

As described, each.....	4.90
With China Index Top, each.....	5.05
With China Index Top and Plain China Handle, ea..	5.30

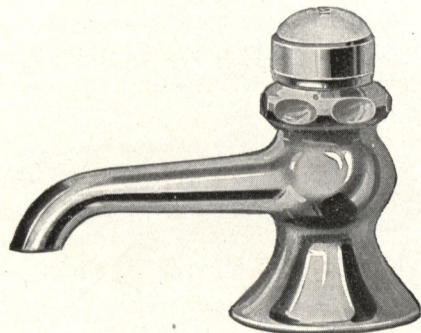


Fig. 9544

No. 4400 Nickel-plated Push-button Slow Self-closing Basin Cock, with China Index Button, $\frac{1}{4}$ -inch Pipe Tail-piece.

As described, each.....	4.45
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Self-closing Basin Cocks

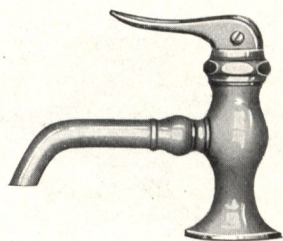


Fig. 9550

No. 0 Telegraph Handle Self-closing Basin Cock

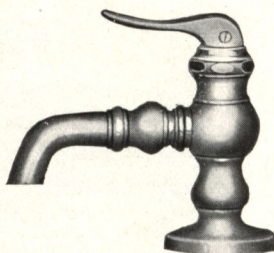


Fig. 9551

No. 1 Telegraph Handle Self-closing Basin Cock

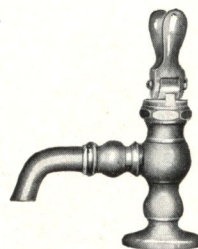


Fig. 9552

No. 1 Doherty Self-closing Basin Cock

Fig. 9550 No. 0 Nickel-plated Telegraph Handle, per dozen.....	36.00
Fig. 9551 No. 1 Nickel-plated Telegraph Handle, per dozen.....	42.60
Fig. 9552 No. 1 Nickel-plated Doherty, per dozen.....	52.20

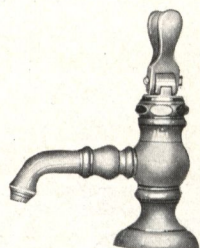


Fig. 9553

No. 2 Doherty Self-closing Basin Cock

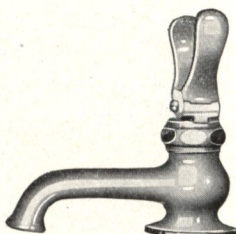


Fig. 9554

No. 4 Doherty Low-down Self-closing Basin Cock

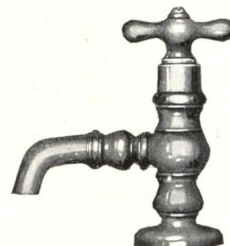


Fig. 9555

No. 1 Peerless Tee Handle Self-closing Basin Cock

Fig. 9553 No. 2 Nickel-plated Doherty, per dozen.....	55.20
Fig. 9554 No. 4 Nickel-plated Doherty, per dozen.....	51.00
Fig. 9555 No. 1 Nickel-plated Peerless, per dozen.....	47.40

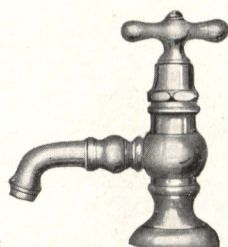


Fig. 9556

No. 2 Peerless Tee Handle Self-closing Basin Cock

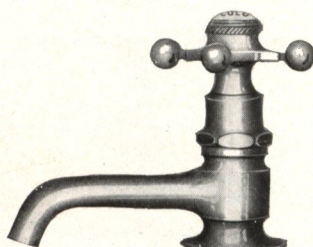


Fig. 9557

No. 6 Peerless Four-arm China Index Handle Self-closing Basin Cock

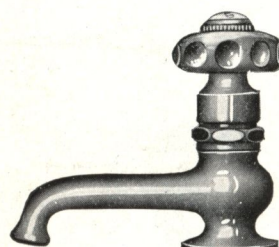


Fig. 9558

No. 8 Peerless Crown Handle China Index Self-closing Basin Cock

Fig. 9556 No. 2 Nickel-plated Peerless, per dozen.....	50.40
Fig. 9557 No. 6 Nickel-plated Peerless, per dozen.....	57.60
Fig. 9558 No. 8 Nickel-plated Peerless, per dozen.....	70.20

Furnished regularly with 1/4-inch Iron Pipe Male Coupling.

Self-closing Basin Cocks

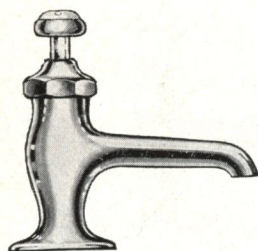


Fig. 9560

Nason Zeno
Push-button Self-
closing Basin
Cock

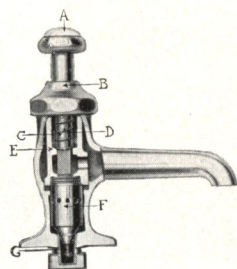


Fig. 9560A

Sectional Cut
of
Fig. 9560
Basin Cock

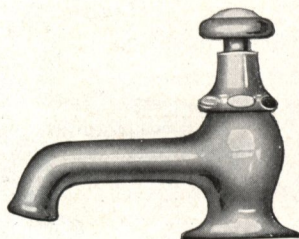


Fig. 9561

Nason Unit
Push-button Self-
closing Basin
Cock

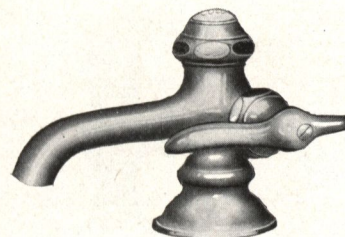


Fig. 9562

Nason Levant Self-closing
Basin Cock with Side Lever
Handle and China
Index on Top

Fig. 9560 Nickel-plated Zeno Slow-closing Basin Cock, per dozen.....	60.00
Fig. 9561 Nickel-plated Unit Self-closing Basin Cock, per dozen.....	60.00
Fig. 9562 Nickel-plated Levant Self-closing Basin Cock, per dozen.....	55.20

Furnished regularly with $\frac{3}{8}$ or $\frac{1}{2}$ -inch Iron Pipe Female Couplings.

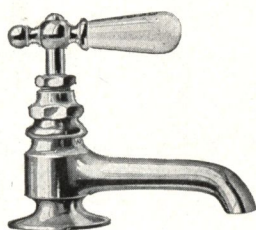
Quick-opening Compression Basin Cocks
China Index Handles

Fig. 9563

No. 17 English Pattern Quick-opening Com-
pression Basin Cock with China Index Handle.

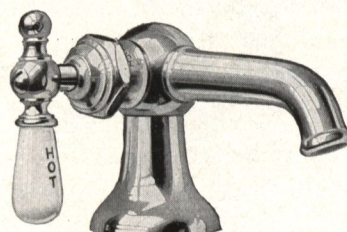


Fig. 9564

No. 10 Colonial Pattern Quick-opening Com-
pression Basin Cock with China Index Handle.

Fig. 9563 No. 17 Nickel-plated Basin Cocks, per dozen.....	54.00
Fig. 9564 No. 10 Nickel-plated Basin Cocks, per dozen.....	60.00

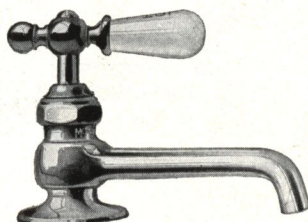


Fig. 9565

No. 14 Regular Pattern Quick-opening Com-
pression Basin Cock with China Index Handle.

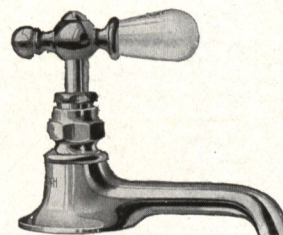


Fig. 9566

No. 15 Low Down Pattern Quick-opening Com-
pression Basin Cock with China Index Handle.

Fig. 9565 No. 14 Nickel-plated Basin Cock, per dozen.....	45.00
Fig. 9566 No. 15 Nickel-plated Basin Cock, per dozen.....	45.00

Furnished regularly with $\frac{1}{4}$ -inch Iron Pipe Male Tail-pieces.

Compression Basin Cocks

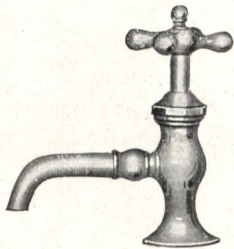


Fig. 9570

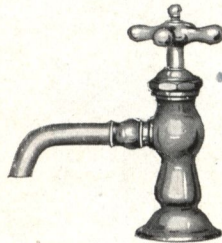
No. 0 Cross Handle
Compression Basin Cock

Fig. 9571

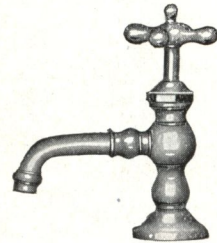
No. 1 Cross Handle
Compression Basin Cock

Fig. 9572

No. 2 Cross Handle
Compression Basin Cock

	Tee Handle	Cross Handle
Fig. 9570 No. 0 Nickel-plated with $2\frac{1}{4}$ -inch Shank, per dozen.....	24.60	27.60
Fig. 9571 No. 1 Nickel-plated with $2\frac{1}{4}$ -inch Shank, per dozen.....	26.40	29.40
Fig. 9572 No. 2 Nickel-plated with $2\frac{1}{4}$ -inch Shank, per dozen.....	28.80	31.80

Add for Stuffing Box on Nos. 0, 1, 2, per dozen 4.20

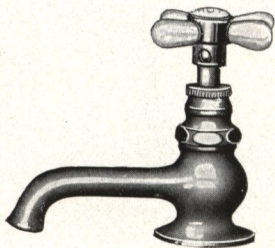


Fig. 9573

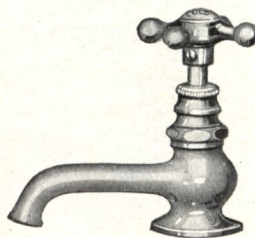
No. $10\frac{1}{2}$ English Pattern
Four-arm China Tip Handle

Fig. 9574

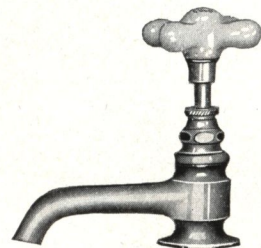
No. 10 English Pattern
Four-arm China Index Handle

Fig. 9575

No. $7\frac{1}{2}$ English Pattern
All China Cross Handle

Fig. 9573 No. $10\frac{1}{2}$ Nickel-plated, Round Body, per dozen.....	65.40
Fig. 9574 No. 10 Nickel-plated, Round Body, per dozen.....	51.00
Fig. 9575 No. $7\frac{1}{2}$ Nickel-plated, Square Body, per dozen.....	49.80

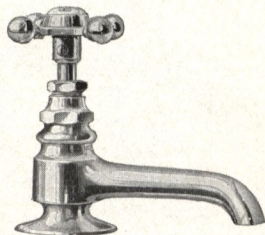


Fig. 9576

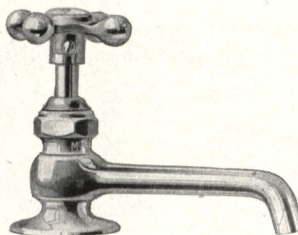
No. 7 English Pattern
Four-arm China Index Handle

Fig. 9577

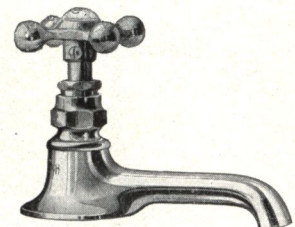
No. 4 English Pattern
Four-arm China Index Handle

Fig. 9578

No. 8 Low-down Four-arm
China Index Handle

Fig. 9576 No. 7 Nickel-plated, Square Body, per dozen.....	47.40
Fig. 9577 No. 4 Nickel-plated with $3\frac{1}{4}$ -inch Shank, 4-inch Spout, per dozen.....	24.60
Fig. 9577A No. 4 Nickel-plated with $2\frac{3}{4}$ -inch Shank, $3\frac{1}{2}$ -inch Spout, per dozen.....	24.00
Fig. 9578 No. 8 Nickel-plated, Low-down, per dozen.....	24.00

Furnished regularly with $\frac{1}{4}$ -inch Iron Pipe Male Couplings.

Fuller Basin Cocks

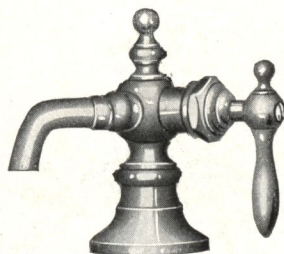


Fig. 9580

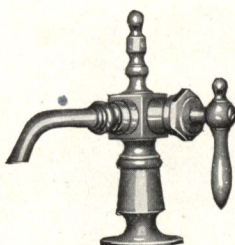


Fig. 9581

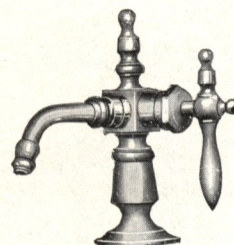


Fig. 9582

No. 0 Plain Fuller Basin Cock No. 1 Plain Fuller Basin Cock No. 2 Plain Fuller Basin Cock

Fig. 9580	No. 0 Nickel-plated with $2\frac{1}{4}$ -inch Shank, per dozen.....	39.00
Fig. 9581	No. 1 Nickel-plated with $2\frac{1}{4}$ inch-Shank, per dozen.....	45.00
Fig. 9582	No. 2 Nickel-plated with $2\frac{1}{4}$ -inch Shank, per dozen.....	51.00

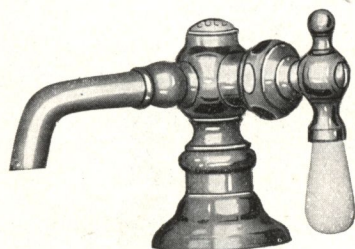


Fig. 9583

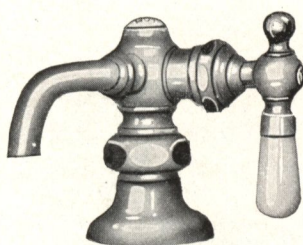


Fig. 9584

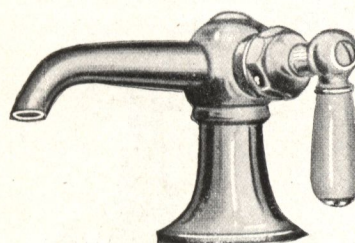


Fig. 9585

No. 0 Fuller Basin Cock with China Handle and Index No. 0 Fuller Basin Cock with Union, China Handle and Index No. 9 Fuller Basin Cock with China Handle and Index

Fig. 9583	No. 0 Nickel-plated with $2\frac{1}{4}$ -inch Shank, per dozen.....	54.00
Fig. 9584	No. 0 Nickel-plated with $2\frac{1}{4}$ -inch Shank, per dozen.....	66.00
Fig. 9585	No. 9 Nickel-plated with $2\frac{1}{4}$ -inch Shank, per dozen.....	69.00

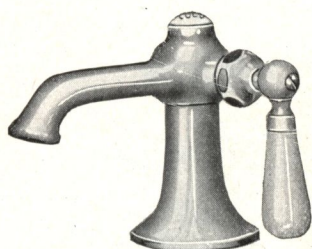


Fig. 9586

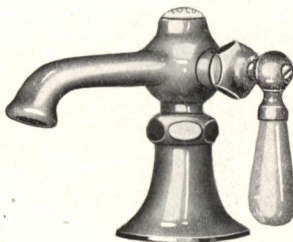


Fig. 9587

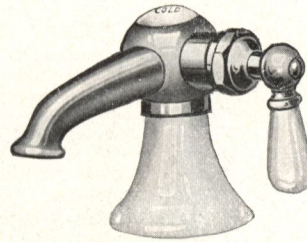


Fig. 9588

No. 11 Fuller Basin Cock with China Handle and Index No. 12 Fuller Basin Cock with Union, China Handle and Index No. 11½ Fuller Basin Cock with China Base, China Handle and Index

Fig. 9586	No. 11 Nickel-plated with $2\frac{1}{4}$ -inch Shank, per dozen.....	72.00
Fig. 9587	No. 12 Nickel-plated with $2\frac{1}{4}$ -inch Shank, per dozen.....	84.00
Fig. 9588	No. 11½ Nickel-plated with $2\frac{1}{4}$ -inch Shank, per dozen.....	120.00

Furnished regularly with $\frac{1}{4}$ -inch Iron Pipe Male Tail-pieces.

Quick-Opening Compression Bibbs

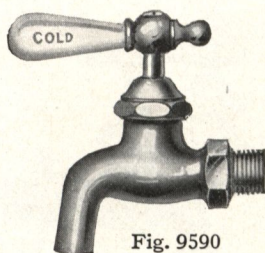


Fig. 9590

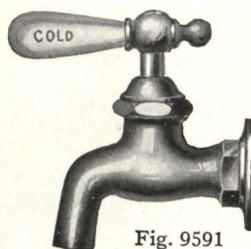
Plain Iron Pipe with Shoulder
China Index Handle

Fig. 9591

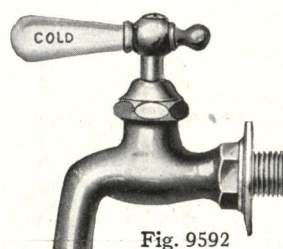
Plain, Flanged Female Iron Pipe,
China Index Handle

Fig. 9592

Plain, Flanged Male Iron Pipe
China Index Handle

Size, inch	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Fig. 9590 Finished, per dozen	26.40	27.60	33.00	42.00	72.00
Fig. 9590 Nickel-plated, per dozen	30.00	31.20	36.60	46.20	78.00
Fig. 9591 Finished, per dozen	32.40	33.60	40.20	51.00	85.20
Fig. 9591 Nickel-plated, per dozen	36.00	37.20	43.80	55.20	91.20
Fig. 9592 Finished, per dozen	34.20	35.40	42.00	52.80	88.20
Fig. 9592 Nickel-plated, per dozen	37.80	39.00	45.60	57.00	94.20

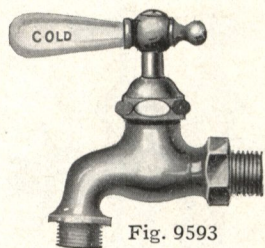


Fig. 9593

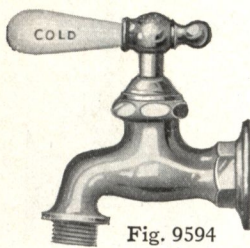
Hose, Iron Pipe with Shoulder
China Index Handle

Fig. 9594

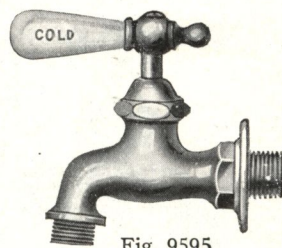
Hose, Flanged Female Iron Pipe
China Index Handle

Fig. 9595

Hose, Flanged Male Iron Pipe
China Index Handle

Size, inch	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Fig. 9593 Finished, per dozen	29.40	30.60	36.00	45.00	79.20
Fig. 9593 Nickel-plated, per dozen	33.00	34.20	39.60	49.20	85.20
Fig. 9594 Finished, per dozen	35.40	36.60	43.20	54.00	95.40
Fig. 9594 Nickel-plated, per dozen	39.00	40.20	46.80	58.20	98.40
Fig. 9595 Finished, per dozen	37.20	38.40	45.00	55.80	95.40
Fig. 9595 Nickel-plated, per dozen	40.80	42.00	48.60	60.00	101.40

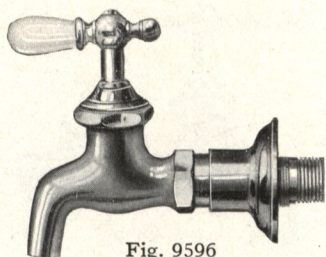


Fig. 9596

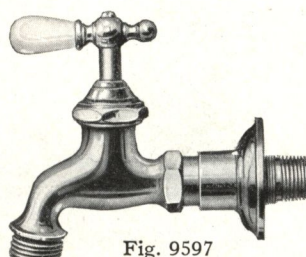
Plain, Extension Screw Flange, Male Iron
Pipe, China Index Handle

Fig. 9597

Hose, Extension Screw Flange, Male Iron
Pipe, China Index Handle

Size, inch	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Fig. 9596 Finished, Plain, per dozen	40.20	48.60	60.00	100.80
Fig. 9596 Nickel-plated, Plain, per dozen	43.80	52.20	64.20	106.80
Fig. 9597 Finished, Hose, per dozen	43.20	51.60	63.00	108.00
Fig. 9597 Nickel-plated, Hose, per dozen	46.80	55.20	67.20	114.00

Quick-Opening Compression Bibbs

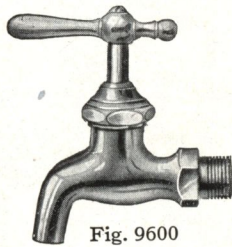


Fig. 9600

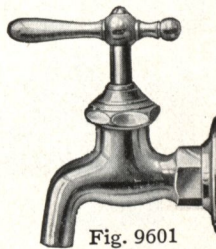
Plain Iron Pipe with Shoulder
Solid Handle

Fig. 9601

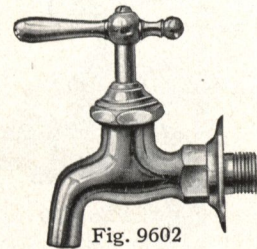
Plain, Flanged Female Iron
Pipe, Solid Handle

Fig. 9602

Plain Flanged Male Iron Pipe
Solid Handle

Size, inch.	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Fig. 9600 Finished, per dozen	20.40	21.60	27.00	36.00	66.00
Fig. 9600 Nickel-plated, per dozen	24.00	25.20	30.60	40.20	72.00
Fig. 9601 Finished, per dozen	26.40	27.60	34.20	45.00	79.20
Fig. 9601 Nickel-plated, per dozen	30.00	31.20	37.80	49.20	85.20
Fig. 9602 Finished, per dozen	28.20	29.40	36.00	46.80	82.20
Fig. 9602 Nickel-plated, per dozen	31.80	33.00	39.60	51.00	88.20

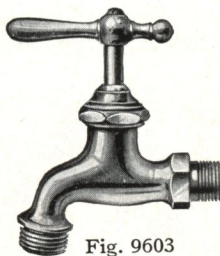


Fig. 9603

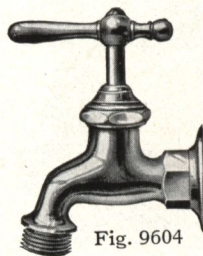
Hose, Iron Pipe with Shoulder
Solid Handle

Fig. 9604

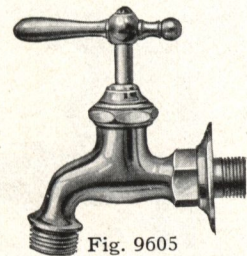
Hose, Flanged Female Iron Pipe
Solid Handle

Fig. 9605

Hose, Flanged Male Iron Pipe
Solid Handle

Size, inch.	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Fig. 9603 Finished, per dozen	23.40	24.60	30.00	39.00	73.20
Fig. 9603 Nickel-plated, per dozen	27.00	28.20	33.60	43.20	79.20
Fig. 9604 Finished, per dozen	29.40	30.60	37.20	48.00	86.40
Fig. 9604 Nickel-plated, per dozen	33.00	34.20	40.80	52.20	92.40
Fig. 9605 Finished, per dozen	31.20	32.40	39.00	49.80	89.40
Fig. 9605 Nickel-plated, per dozen	34.80	36.00	42.60	54.00	95.40

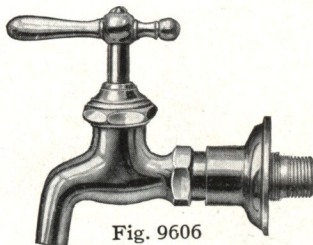


Fig. 9606

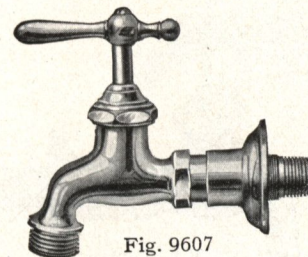
Plain, Extension Screw Flange Male Iron Pipe
Solid Handle

Fig. 9607

Hose, Extension Screw Flange Male Iron Pipe
Solid Handle

Size, inch.	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Fig. 9606 Finished, Plain, per dozen	34.20	42.60	54.00	94.80
Fig. 9606 Nickel-plated, Plain, per dozen	37.80	46.20	58.20	100.80
Fig. 9607 Finished, Hose, per dozen	37.20	45.60	57.00	102.00
Fig. 9607 Nickel-plated, Hose, per dozen	40.80	49.20	61.20	108.00

Compression Bibbs

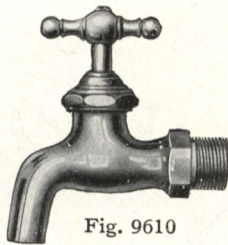


Fig. 9610

Iron Pipe

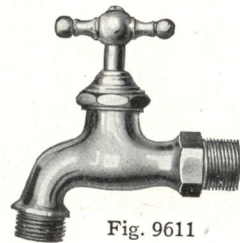


Fig. 9611

Compression Plain Bibb, S. S. S.

Compression Hose Bibb, S. S. S.

Size, inches.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Fig. 9610 Rough, Plain, per dozen.....	16.20	16.80	17.40	22.80	30.60	54.00	106.80	139.20	282.00
Fig. 9610 Finished, Plain, per dozen.....	18.00	18.60	19.80	25.20	33.00	60.00	114.00	150.00	300.00
Fig. 9610 Nickel-plated, Plain, per dozen.....	21.60	22.20	23.40	28.80	37.20	66.00	124.80	165.00	330.00
Fig. 9611 Rough, Hose, per dozen.....	19.80	20.40	25.80	33.60	61.20	117.60	154.20	304.20	
Fig. 9611 Finished, Hose, per dozen.....	21.60	22.80	28.20	36.00	67.20	124.80	165.00	322.20	
Fig. 9611 Nickel-plated, Hose, per dozen.....	25.20	26.40	31.80	40.20	73.20	135.60	180.00	352.20	

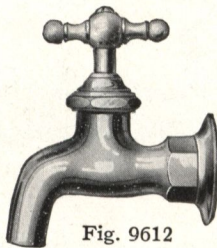


Fig. 9612

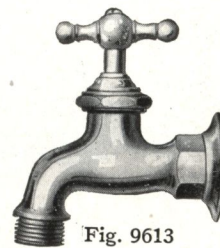
Iron Pipe with
Hexagon

Fig. 9613

Compression Plain Bibb
Solid Flange, FemaleCompression Hose Bibb
Solid Flange, Female

Size, inch.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Fig. 9612 Finished, Plain, per dozen.....	24.60	25.80	32.40	42.00	73.20
Fig. 9612 Nickel-plated, Plain, per dozen.....	28.20	29.40	36.00	46.20	79.20
Fig. 9613 Finished, Hose, per dozen.....	27.60	28.80	35.40	45.00	80.40
Fig. 9613 Nickel-plated, Hose, per dozen.....	31.20	32.40	39.00	49.20	86.40

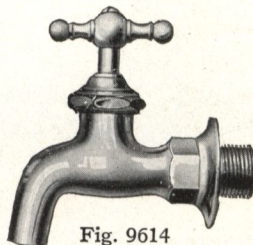


Fig. 9614

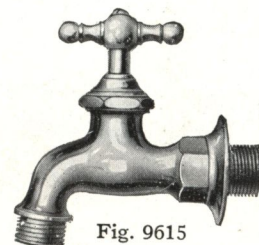
Iron Pipe with
Hexagon

Fig. 9615

Compression Plain Bibb
Solid Flange, MaleCompression Hose Bibb
Solid Flange, Male

Size, inch.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Fig. 9614 Finished, Plain, per dozen.....	26.40	27.60	34.20	43.80	76.20
Fig. 9614 Nickel-plated, Plain, per dozen.....	30.00	31.20	37.80	48.00	82.20
Fig. 9615 Finished, Hose, per dozen.....	29.40	30.60	37.20	46.80	83.40
Fig. 9615 Nickel-plated, Hose, per dozen.....	33.00	34.20	40.80	51.00	89.40

Compression Bibbs

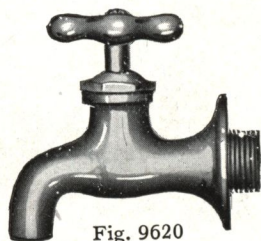


Fig. 9620

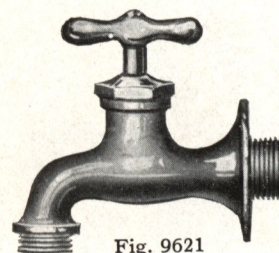
Compression Bibb, Plain
Solid Flange, Male

Fig. 9621

Compression Bibb, Hose
Solid Flange, Male

Size, inch.	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Fig. 9620 Finished, Plain, per dozen	24.60	25.80	32.40	42.00	73.20
Fig. 9620 Nickel-plated, Plain, per dozen	28.20	29.40	36.00	46.20	79.20
Fig. 9621 Finished, Hose, per dozen	27.60	28.80	35.40	45.00	80.40
Fig. 9621 Nickel-plated, Hose, per dozen	31.20	32.40	39.00	49.20	86.40

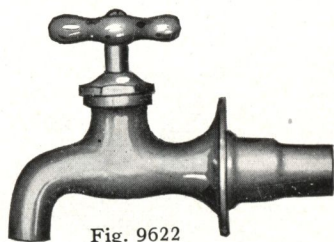


Fig. 9622

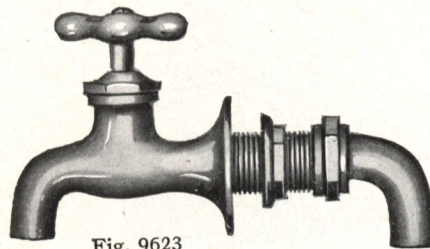
Compression Bibb, Plain, Lead Pipe
Solid Flange and Thimble

Fig. 9623

Compression Bibb, Plain, Solid Flange
with Nut and Bent Coupling

Size, inch.	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Fig. 9622 Finished, Plain, per dozen	27.60	28.80	36.00	46.20	79.80
Fig. 9622 Nickel-plated, Plain, per dozen	31.20	32.40	39.60	50.40	85.80
Fig. 9623 Finished, Plain, per dozen	30.60	34.80	45.00	60.00	105.00
Fig. 9623 Nickel-plated, Plain, per dozen	34.20	38.40	48.60	64.20	111.00
Add for Hose End, per dozen	3.00	3.00	3.00	3.00	7.20
Add for Stuffing Box, per dozen	4.20	4.80	5.40	6.00	10.80

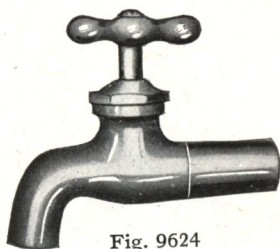


Fig. 9624

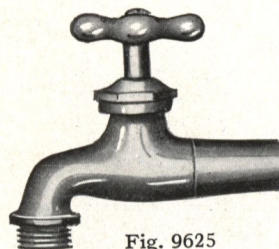
Compression Bibb, Plain
Lead Pipe

Fig. 9625

Compression Bibb, Hose
Lead Pipe

Size, inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Fig. 9624 Rough, Plain, per dozen	17.40	18.00	18.60	24.60	33.00	57.60	112.20	148.20	297.00
Fig. 9624 Finished, Plain, per dozen	19.20	19.80	21.00	27.00	35.40	63.60	119.40	159.00	315.00
Fig. 9624 Nickel-plated, Plain, per dozen	22.80	23.40	24.60	30.60	39.60	69.60	130.20	174.00	345.00
Fig. 9625 Rough, Hose, per dozen	...	21.00	21.60	27.60	36.00	64.80	123.00	163.20	319.20
Fig. 9625 Finished, Hose, per dozen	...	22.80	24.00	30.00	38.40	70.80	130.20	174.00	337.20
Fig. 9625 Nickel-plated, Hose, per dozen	...	26.40	27.60	33.60	42.60	76.80	141.00	189.00	367.20
Add for Stuffing Box, per dozen	3.60	4.20	4.80	5.40	6.00	10.80	18.60	22.20	33.60

Compression Bibbs

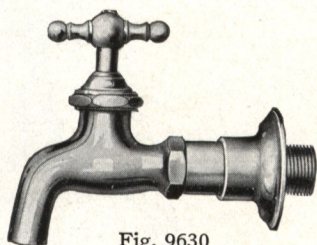


Fig. 9630

Iron Pipe
with Hexagon and
Extension Screw
Flange

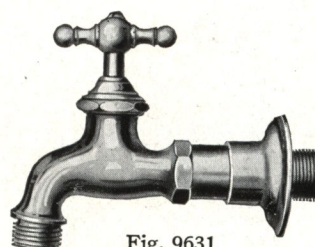


Fig. 9631

Compression Plain Bibb

Compression Hose Bibb

Size, inch.	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Fig. 9630 Finished, Plain, per dozen	32.40	40.80	51.00	88.80
Fig. 9630 Nickel-plated, Plain, per dozen	36.00	44.40	55.20	94.80
Fig. 9631 Finished, Hose, per dozen	35.40	43.80	54.00	96.00
Fig. 9631 Nickel-plated, Hose, per dozen	39.00	47.40	58.20	102.00

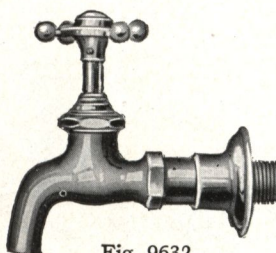


Fig. 9632

Compression Plain Bibb, with Extension Screw Flange, with
Hexagon, China Index Handle

Size, inch.	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$
Fig. 9632 Finished, per dozen	41.40	49.20	59.40
Fig. 9632 Nickel-plated, per dozen	45.00	52.80	63.60

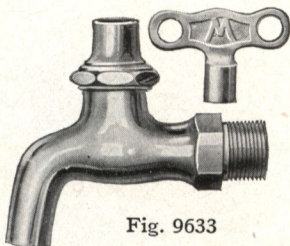


Fig. 9633

Loose Key
Iron Pipe

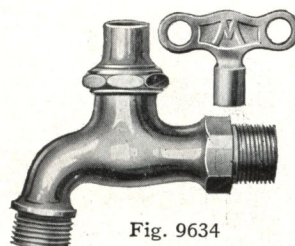


Fig. 9634

Compression Loose Key Plain Bibb, S. S. S.

Compression Loose Key Hose Bibb, S. S. S.

Size, inch.	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Fig. 9633 Rough, Plain, per dozen	21.60	22.80	28.80	37.80	78.00
Fig. 9633 Finished, Plain, per dozen	23.40	25.20	31.20	40.20	84.00
Fig. 9633 Nickel-plated, Plain, per dozen	27.00	28.80	34.80	44.40	90.00
Fig. 9634 Rough, Hose, per dozen	24.60	25.80	31.80	40.80	85.20
Fig. 9634 Finished, Hose, per dozen	26.40	28.20	34.20	43.20	91.20
Fig. 9634 Nickel-plated, Hose, per dozen	30.00	31.80	37.80	47.40	97.20

One Key with each Bibb.

Compression Bibbs

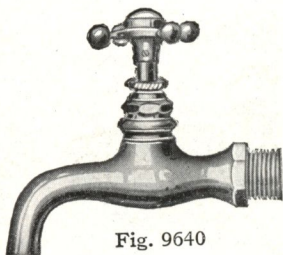


Fig. 9640

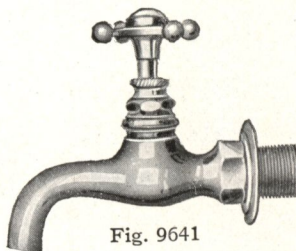


Fig. 9641

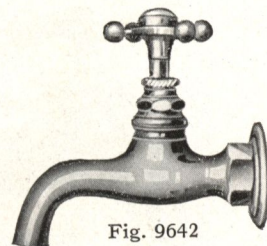


Fig. 9642

Plain Iron Pipe with Long Spout, China Index Handle and Stuffing Box.

Plain Solid Flange, Male, Iron Pipe, Long Spout, China Index Handle and Stuffing Box.

Plain Solid Flange, Female, Iron Pipe, Long Spout, China Index Handle and Stuffing Box.

Size, inch	1/2	5/8	3/4
Fig. 9640 Finished, per dozen	43.80	49.20	57.60
Fig. 9640 Nickel-plated, per dozen	47.40	52.80	61.80
Fig. 9641 Finished, per dozen	51.60	58.20	68.40
Fig. 9641 Nickel-plated, per dozen	55.20	61.80	72.60
Fig. 9642 Finished, per dozen	49.80	56.40	66.60
Fig. 9642 Nickel-plated, per dozen	53.40	60.00	70.80

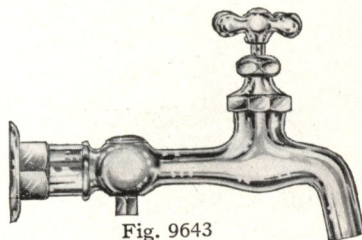


Fig. 9643

Nason Extra Long Compression Slop Sink Bibb, with Four-arm China Index Handle and Stuffing Box, Flanged Female, Iron Pipe, with Integral Ground Key Shut-off.

Distance from face of Flange to center of Spout 8 1/4 inches.

Size, inch	3/4
Fig. 9643 Finished, per dozen	78.00
Fig. 9643 Nickel-plated, per dozen	81.00

Sanitap Sink Bibbs

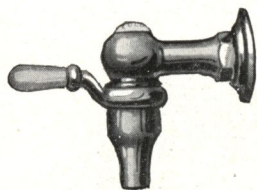


Fig. 9644

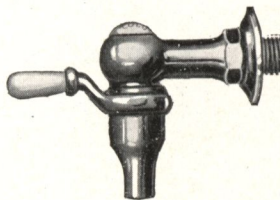


Fig. 9645

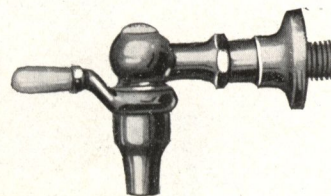


Fig. 9646

Sanitap Bibb, Solid Flange, Female, with China Handle and Index.

Sanitap Bibb, Solid Flange, Male, with China Handle and Index.

Sanitap Bibb, Adjustable Flange, Male, China Handle and Index.

Size, inch	1/2	5/8
Fig. 9644 Finished, with China Handle, per dozen	51.60	58.20
Fig. 9644 Nickel-plated, with China Handle, per dozen	55.20	61.80
Fig. 9645 Finished, with China Handle, per dozen	53.40	60.00
Fig. 9645 Nickel-plated, with China Handle, per dozen	57.00	63.60
Fig. 9646 Finished, with China Handle, per dozen	58.20	66.60
Fig. 9646 Nickel-plated, with China Handle, per dozen	61.80	70.20
If with Plain Handles, deduct, per dozen	3.00	3.00

Fuller Bibbs

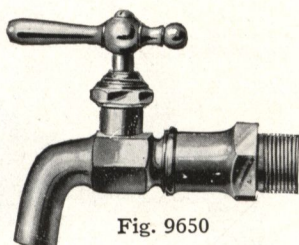


Fig. 9650

Fuller Plain Bibb

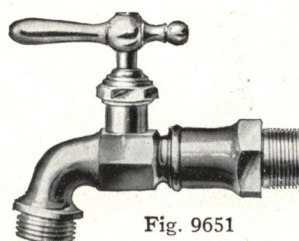


Fig. 9651

Fuller Hose Bibb

Size, inch.....	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Fig. 9650 Finished, Plain, per dozen.....	23.40	27.60	38.40	72.00
Fig. 9650 Nickel-plated, Plain, per dozen.....	28.20	32.40	45.60	81.00
Fig. 9651 Finished, Hose, per dozen.....	27.00	31.20	42.00	80.40
Fig. 9651 Nickel-plated, Hose, per dozen.....	31.80	36.00	49.20	89.40

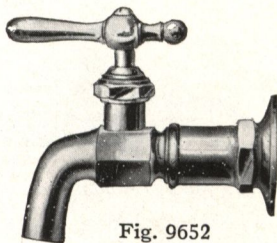


Fig. 9652

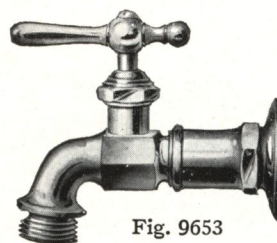
Iron Pipe with
Hexagon

Fig. 9653

Fuller Plain Bibb with Solid
Flange, FemaleFuller Hose Bibb with Solid
Flange, Female

Size, inch.....	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Fig. 9652 Finished, Plain, per dozen.....	29.40	34.80	47.40	85.20
Fig. 9652 Nickel-plated, Plain, per dozen.....	34.20	39.60	54.60	94.20
Fig. 9653 Finished, Hose, per dozen.....	33.00	38.40	51.00	93.60
Fig. 9653 Nickel-plated, Hose, per dozen.....	37.80	43.20	58.20	102.60

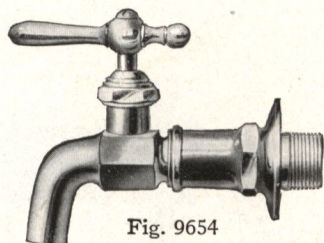


Fig. 9654

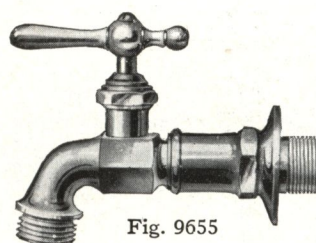
Iron Pipe with
Hexagon

Fig. 9655

Fuller Plain Bibb with Solid
Flange, MaleFuller Hose Bibb with Solid
Flange, Male

Size, inch.....	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Fig. 9654 Finished, Plain, per dozen.....	31.20	36.60	49.20	88.20
Fig. 9654 Nickel-plated, Plain, per dozen.....	36.00	41.40	56.40	97.20
Fig. 9655 Finished, Hose, per dozen.....	34.80	40.20	52.80	96.60
Fig. 9655 Nickel-plated, Hose, per dozen.....	39.60	45.00	60.00	105.60

Fuller Bibbs

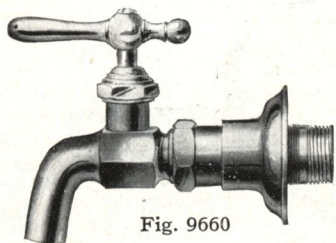


Fig. 9660

Fuller Plain Bibb

Size, inch.....	
Fig. 9660 Finished, Plain, per dozen.....	32.40
Fig. 9660 Nickel-plated, Plain, per dozen.....	37.20
Fig. 9661 Finished, Hose, per dozen.....	36.00
Fig. 9661 Nickel-plated, Hose, per dozen.....	40.80

Iron Pipe with
Hexagon and
Adjustable Screw
Flange and Solid
Handle

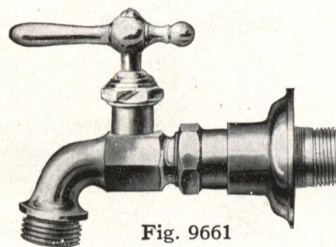


Fig. 9661

Fuller Hose Bibb

	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Fig. 9660 Finished, Plain, per dozen.....	32.40	38.40	49.80	90.00
Fig. 9660 Nickel-plated, Plain, per dozen.....	37.20	43.20	57.00	99.00
Fig. 9661 Finished, Hose, per dozen.....	36.00	42.00	53.40	98.40
Fig. 9661 Nickel-plated, Hose, per dozen.....	40.80	46.80	60.60	107.40

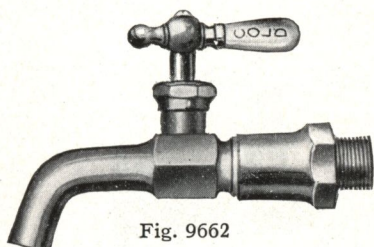


Fig. 9662

Fuller Bibb, Plain
Iron Pipe

Size, inch.....	
Fig. 9662 Finished, per dozen.....	46.80
Fig. 9662 Nickel-plated, per dozen.....	51.60
Fig. 9663 Finished, per dozen.....	52.80
Fig. 9663 Nickel-plated, per dozen.....	57.60

Iron Pipe
Long Spout and
China
Lever Handle

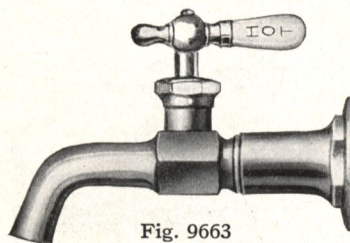


Fig. 9663

Fuller Bibb, Plain
Solid Flange, Female

	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$
Fig. 9662 Finished, per dozen.....	46.80	51.00	61.80
Fig. 9662 Nickel-plated, per dozen.....	51.60	55.80	69.00
Fig. 9663 Finished, per dozen.....	52.80	58.20	70.80
Fig. 9663 Nickel-plated, per dozen.....	57.60	63.00	78.00

Fig. 9662-3A Hose Bibbs (Not Illustrated)

Size, inch.....	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$
Fig. 9662A Finished, per dozen.....	50.40	54.60	65.40
Fig. 9662A Nickel-plated, per dozen.....	55.20	59.40	72.60
Fig. 9663A Finished, per dozen.....	56.40	61.80	74.40
Fig. 9663A Nickel-plated, per dozen.....	61.20	66.60	81.60

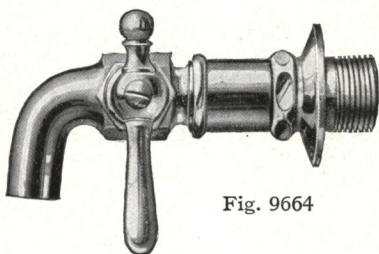


Fig. 9664

Solid Flange, Male

Fig. 9664

Size, inch.....	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$
Finished, per dozen.....	31.80	38.40	52.20
Nickel-plated, per dozen.....	36.60	43.20	59.40

Fuller
Wash Tray Bibbs
Iron Pipe

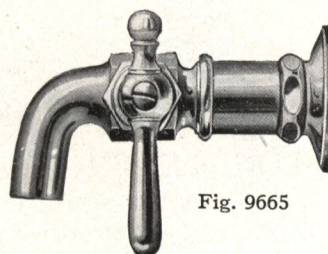


Fig. 9665

Solid Flange, Female

Fig. 9665

Size, inch.....	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$
Finished, per dozen.....	31.80	38.40	52.20
Nickel-plated, per dozen.....	36.60	43.20	59.40

Telegraph Handle Self-closing Bibbs

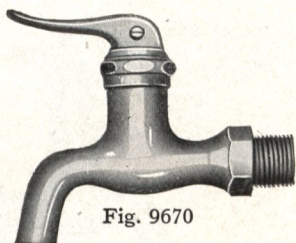


Fig. 9670

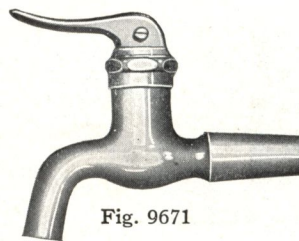
Telegraph Handle Self-closing Plain Bibb
Iron Pipe

Fig. 9671

Telegraph Handle Self-closing Plain Bibb
Lead Pipe

Size, inch.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Fig. 9670 Finished, per dozen.....	24.60	25.80	32.40	42.60	74.40
Fig. 9670 Nickel-plated, per dozen.....	30.60	31.80	38.40	50.40	84.60
Fig. 9671 Finished, per dozen.....	25.80	27.00	34.20	45.00	78.00
Fig. 9671 Nickel-plated, per dozen.....	31.80	33.00	40.20	52.80	88.20

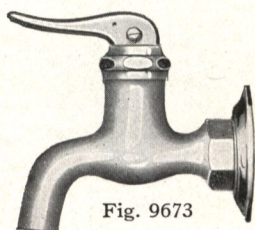


Fig. 9673

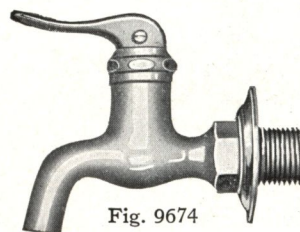
Telegraph Handle Self-closing Bibb, Solid
Flange Female Iron Pipe with Hexagon

Fig. 9674

Telegraph Handle Self-closing Bibb, Solid
Flange Male Iron Pipe with Hexagon

Size, inch.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Fig. 9673 Finished, per dozen.....	30.60	31.80	39.60	51.60	87.60
Fig. 9673 Nickel-plated, per dozen.....	36.60	37.80	45.60	59.40	97.80
Fig. 9674 Finished, per dozen.....	32.40	33.60	41.40	53.40	90.60
Fig. 9674 Nickel-plated, per dozen.....	38.40	39.60	47.40	61.20	100.80

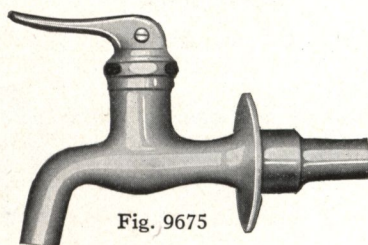


Fig. 9675

Telegraph Handle Self-closing Bibb, Solid Flange
and Thimble for Lead Pipe

Size, inch.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Fig. 9675 Finished, per dozen.....	33.60	34.80	43.20	55.80	94.20
Fig. 9675 Nickel-plated, per dozen.....	39.60	40.80	49.20	63.60	104.40

Peerless Self-closing Bibbs

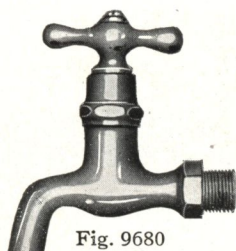


Fig. 9680

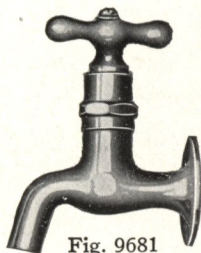


Fig. 9681

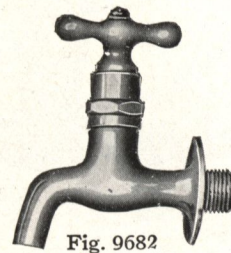


Fig. 9682

Peerless Self-closing Plain Bibb
Iron Pipe, Tee
Handle

Peerless Self-closing Plain Bibb
Flange Female Iron Pipe
Tee Handle

Peerless Self-closing Plain Bibb
Flange Male Iron Pipe
Tee Handle

Size, inch	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Fig. 9680 Finished, per dozen	29.40	30.60	37.20	47.40	79.20
Fig. 9680 Nickel-plated, per dozen	35.40	36.60	43.20	55.20	89.40
Fig. 9681 Finished, per dozen	35.40	36.60	44.40	56.40	92.40
Fig. 9681 Nickel-plated, per dozen	41.40	42.60	50.40	64.20	102.60
Fig. 9682 Finished, per dozen	35.40	36.60	44.40	56.40	92.40
Fig. 9682 Nickel-plated, per dozen	41.40	42.60	50.40	64.20	102.60

Doherty Self-closing Bibbs

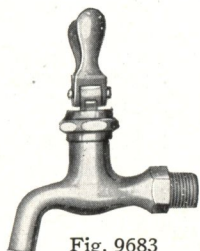


Fig. 9683

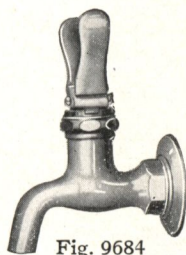


Fig. 9684

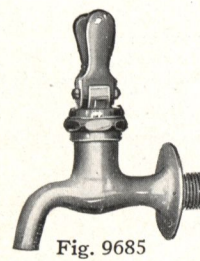


Fig. 9685

Doherty Self-closing Plain Bibb
Iron Pipe

Doherty Self-closing Plain Bibb
Flange Female Iron Pipe

Doherty Self-closing Plain Bibb
Flange Male Iron Pipe

Size, inch	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Fig. 9683 Finished, per dozen	34.20	35.40	42.00	52.20	84.00
Fig. 9683 Nickel-plated, per dozen	40.20	41.40	48.00	60.00	94.20
Fig. 9684 Finished, per dozen	40.20	41.40	49.20	61.20	97.20
Fig. 9684 Nickel-plated, per dozen	46.20	47.40	55.20	69.00	107.40
Fig. 9685 Finished, per dozen	42.00	43.20	51.00	63.00	100.20
Fig. 9685 Nickel-plated, per dozen	48.00	49.20	57.00	70.80	110.40

Drinking Fountain Faucets

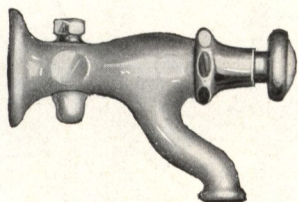


Fig. 9690

Nason Horizontal Push-button Direct Self-closing Fountain Faucet with Integral Shut-off, Flanged Female for $\frac{1}{2}$ -inch Iron Pipe.

Nickel-plated, each..... 8.00

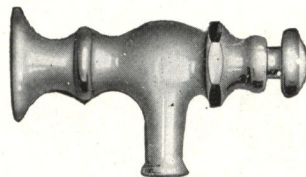


Fig. 9691

Nason Horizontal Push-button Direct Self-closing Cooler or Fountain Faucet, Flanged Female for $\frac{1}{2}$ -inch Iron Pipe.

Nickel-plated, each..... 5.00

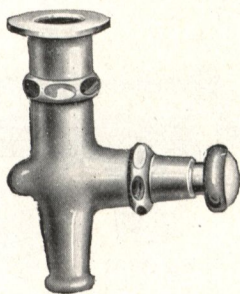


Fig. 9692

Nason Vertical Front Push-button Direct Self-closing Fountain Faucet, Flanged Female for $\frac{1}{2}$ -inch Iron Pipe.

Nickel-plated, each..... 6.00

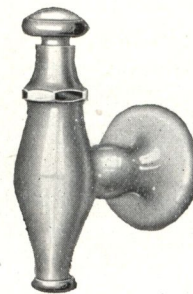


Fig. 9693

Nason Vertical Top Push-button Direct Self-closing Fountain Faucet, Flanged Female for $\frac{1}{2}$ -inch Iron Pipe.

Nickel-plated, each..... 6.00

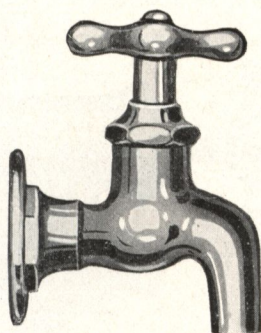


Fig. 9694

Nason Tee Handle Self-closing Fountain Faucet, Flanged Female Iron Pipe.

Size, inch.....	$\frac{3}{8}$	$\frac{1}{2}$
Nickel-plated, each.....	3.45	3.55

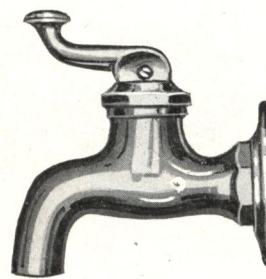


Fig. 9695

Nason Telegraph Handle Self-closing Fountain Faucet, Flanged Female Iron Pipe..

Size, inch.....	$\frac{3}{8}$	$\frac{1}{2}$
Nickel-plated, each.....	3.05	3.15

Any of the above Fountain Faucets can be furnished in white metal. Price on application.

Compression Wash Tray Bibbs

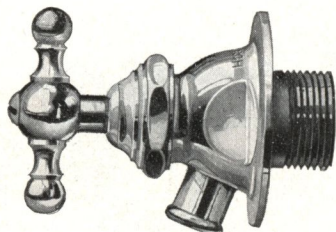


Fig. 9700

Stub Pattern

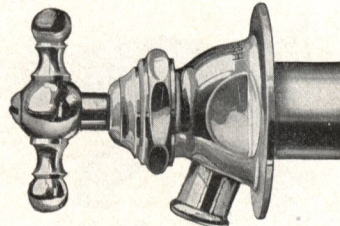


Fig. 9701

Solid Flange Male Iron Pipe

Size, inch.....	$\frac{1}{2}$	$\frac{3}{4}$
Fig. 9700 Finished, per dozen.....	18.60	21.00
Fig. 9700 Nickel-plated, per dozen.....	22.20	24.60

Solid Flange Female Iron Pipe

Size, inch.....	$\frac{1}{2}$	$\frac{3}{4}$
Fig. 9701 Finished, per dozen.....	20.40	22.80
Fig. 9701 Nickel-plated, per dozen.....	24.00	26.40

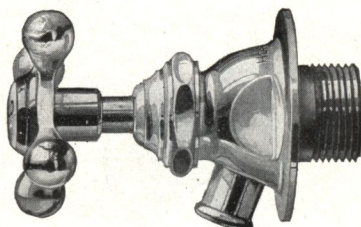


Fig. 9702

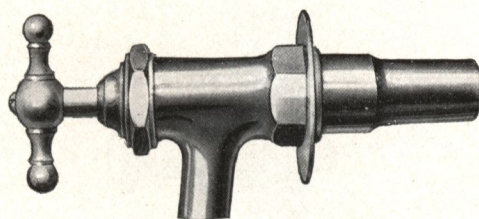


Fig. 9703

Compression Stub Wash Tray Bibb with China Index Handle

Add to list of regular Stub Wash Tray Bibb,
Figs. 9700-9701

Size, inch.....	$\frac{1}{2}$	$\frac{3}{4}$
Per dozen.....	9.00	8.40

Compression Wash Tray Bibb, Solid Flange and Thimble, Lead Pipe with Hexagon

Size, inch.....	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$
Fig. 9703 Finished, per dozen....	30.60	37.80	48.00
Fig. 9703 Nickel-plated, per doz.	34.20	41.40	52.20
Add for Stuffing Box, per dozen..	4.80	5.40	6.00
Deduct if without Hexagon, per dozen 1.80			

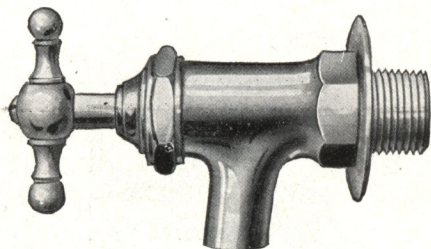


Fig. 9704

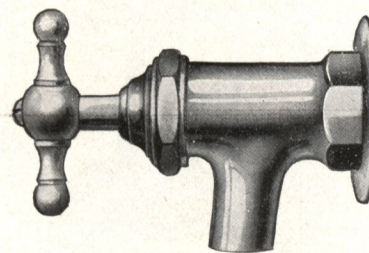


Fig. 9705

Compression Wash Tray Bibb, Solid Flange Male Iron Pipe with Hexagon

Size, inch.....	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$
Fig. 9704 Finished, per dozen....	27.60	34.20	43.80
Fig. 9704 Nickel-plated, per doz.	31.20	37.80	48.00
Add for Stuffing Box, per dozen..	4.80	5.40	6.00
Deduct if without Hexagon, per dozen 1.80			

Compression Wash Tray Bibb, Solid Flange Female Iron Pipe with Hexagon

Size, inch.....	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$
Fig. 9705 Finished, per dozen....	27.60	34.20	43.80
Fig. 9705 Nickel-plated, per doz.	31.20	37.80	48.00
Add for Stuffing Box, per dozen..	4.80	5.40	6.00
Deduct if without Hexagon, per dozen 1.80			

Compression Sill Cocks

Special Heavy Pattern

Wheel Handles—Figs. 9710-9711

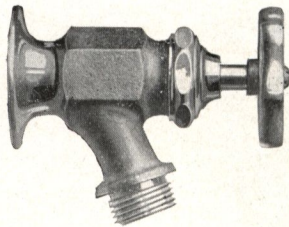


Fig. 9710. Straight Pattern

Size, inch.....	$\frac{1}{2}$	$\frac{3}{4}$
Rough Nickel-plated, per dozen.....	30.00	30.00
Finished Brass, per dozen.....	30.00	30.00
Finished Nickel-plated, per dozen.....	33.60	33.60

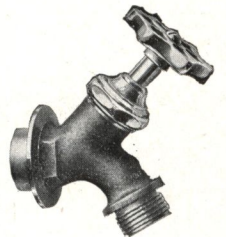


Fig. 9711. Y Pattern

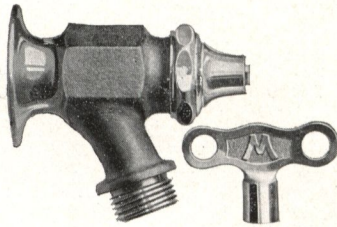


Fig. 9712 Straight Pattern

Loose Key—Figs. 9712-9713

Size, inch.....	$\frac{1}{2}$	$\frac{3}{4}$
Rough Nickel-plated, per dozen..	34.80	34.80
Finished Brass, per dozen.....	34.80	34.80
Finished Nickel-plated, per dozen	38.40	38.40

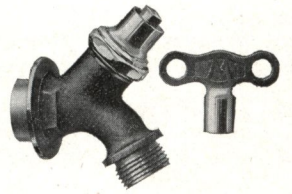


Fig. 9713 Y Pattern

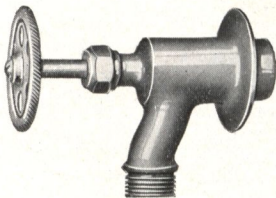


Fig. 9714 Wheel Handle

Regular Pattern

$\frac{3}{4}$ -inch Hose Thread on Nozzles
 $\frac{1}{2}$ or $\frac{3}{4}$ -inch Iron Pipe Connection

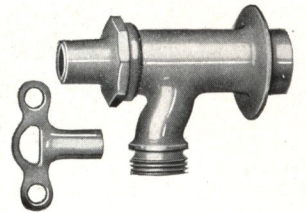


Fig. 9715 Loose Key

	Tee Handle	Iron Wheel	Brass Wheel	Loose Key
Fig. 9714 Rough Nickel-plated, sizes $\frac{1}{2}$ or $\frac{3}{4}$ -inch, per dozen.....	36.00	36.00	40.80	40.80
Fig. 9714 Finished Brass, sizes $\frac{1}{2}$ or $\frac{3}{4}$ -inch, per dozen.....	36.00	36.00	40.80	40.80
Fig. 9714 Finished Nickel-plated, sizes $\frac{1}{2}$ or $\frac{3}{4}$ -inch, per dozen.....	40.20	40.20	45.00	45.00
Fig. 9715 Rough Nickel-plated, sizes $\frac{1}{2}$ or $\frac{3}{4}$ -inch, per dozen.....	34.20	34.20	39.00	39.00
Fig. 9715 Finished Brass, sizes $\frac{1}{2}$ or $\frac{3}{4}$ -inch, per dozen.....	34.20	34.20	39.00	39.00
Fig. 9715 Finished Nickel-plated, sizes $\frac{1}{2}$ or $\frac{3}{4}$ -inch, per dozen.....	38.40	38.40	43.20	43.20

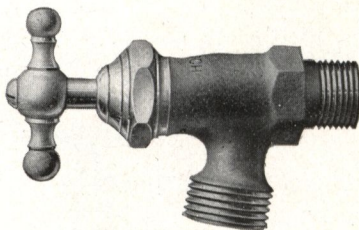


Fig. 9716. Male Iron Pipe

Compression Boiler Cocks

$\frac{3}{4}$ -inch Hose Thread on
 Nozzle

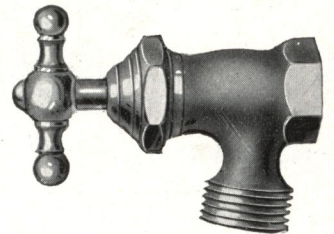


Fig. 9717. Female Iron Pipe

Size, inch.....	$\frac{1}{2}$	$\frac{3}{4}$
Fig. 9716 Rough Nickel-plated Male Iron Pipe, per dozen.....	17.40	22.80
Fig. 9717 Rough Nickel-plated Female Iron Pipe, per dozen.....	19.20	24.60

Compression Lavatory Stops

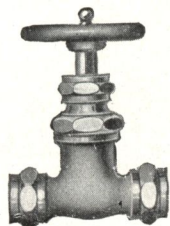


Fig. 9720 Straight

Both Ends for Iron
Pipe

Heavy Wheel Handle
Finished Both
Sides

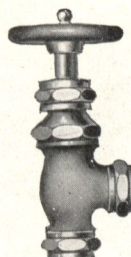


Fig. 9721. Angle

Straight or Angle Pattern

Size, inch.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$
Fig. 9720-1 Finished, per dozen.....	25.20	30.00	36.60	46.20
Fig. 9720-1 Nickel-plated, per dozen.....	28.80	33.60	40.20	50.40

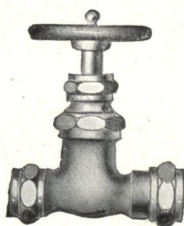


Fig. 9722 Straight

Slip Joint One End, Other
End for Iron Pipe

Heavy Wheel Handle
Finished Both
Sides

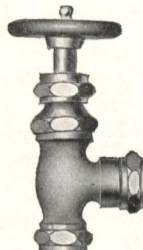


Fig. 9723. Angle

Straight or Angle Pattern

Size, inch.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$
Fig. 9722-3 Finished, per dozen.....	28.20	28.20	34.80	45.60
Fig. 9722-3 Nickel-plated, per dozen.....	31.80	31.80	38.40	49.20
Size Body, inch.....	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$
Size Slip Joint, inch.....	$\frac{7}{16}$ to $\frac{11}{16}$	$\frac{7}{16}$ to $\frac{11}{16}$	$\frac{3}{4}$ to $\frac{7}{8}$	$\frac{3}{4}$ to 1

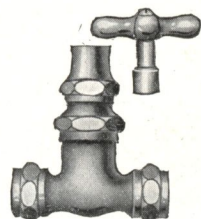


Fig. 9724 Straight

Both Ends for Iron
Pipe

Loose Key with
Stuffing
Box

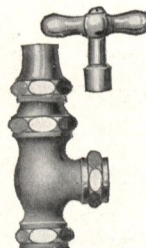


Fig. 9725. Angle

Straight or Angle Pattern

Size, inch.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$
Fig. 9724-5 Finished, per dozen.....	25.20	30.00	36.60	46.20
Fig. 9724-5 Nickel-plated, per dozen.....	28.80	33.60	40.20	50.40

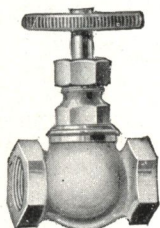


Fig. 9726. Globe

Nickel-plated Globe and Angle Valve with
Soft Seat and Wheel Handle
with Milled Edge

Figs. 9726-9727

Size, inch.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$
Globe or Angle, each.....	3.50	3.70	4.10
Globe or Angle with Loose Key, each.....	3.50	3.70	4.10

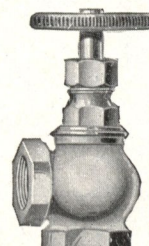


Fig. 9727. Angle

Compression Stops and Stops and Wastes

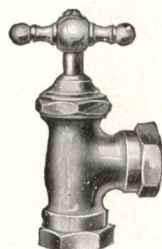


Fig. 9730

Angle, Iron Pipe

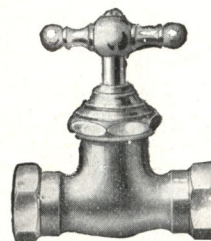
Tee
Handle

Fig. 9731

Straight, Iron Pipe

Size, inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Fig. 9730 Rough, per dozen	13.80	14.40	17.40	22.80	30.60	54.00	106.80	139.20	282.00
Fig. 9730 Finished, per dozen	15.60	16.20	19.80	25.20	33.00	60.00	114.00	150.00	300.00
Fig. 9730 Nickel-plated, per dozen	19.20	19.80	23.40	28.80	37.20	66.00	124.80	165.00	330.00
Fig. 9731 Rough, per dozen	13.80	14.40	17.40	22.80	30.60	54.00	106.80	139.20	282.00
Fig. 9731 Finished, per dozen	15.60	16.20	19.80	25.20	33.00	60.00	114.00	150.00	300.00
Fig. 9731 Nickel-plated, per dozen	19.20	19.80	23.40	28.80	37.20	66.00	124.80	165.00	330.00
Add for Stuffing Box, per dozen	3.60	4.20	4.80	5.40	6.00	10.80	18.60	22.20	33.60

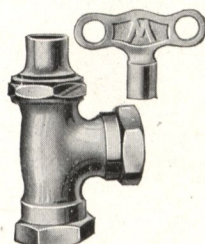


Fig. 9732

Angle, Iron Pipe

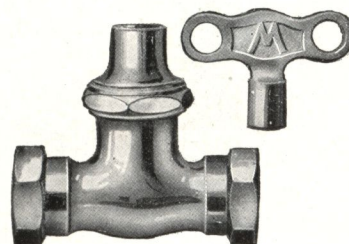
Loose
Key

Fig. 9733

Straight, Iron Pipe

Straight or Angle Pattern

Size, inch	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Fig. 9732-3 Rough, per dozen	19.20	22.80	28.80	37.80	78.00
Fig. 9732-3 Finished, per dozen	21.00	25.20	31.20	40.20	84.00
Fig. 9732-3 Nickel-plated, per dozen	24.60	28.80	34.80	44.40	90.00

One Key with each Stop

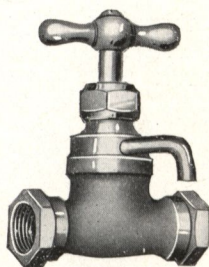


Fig. 9734

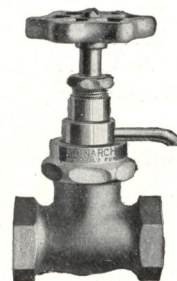
Straight Iron Pipe, Tee Handle
Regular PatternCompression Stop
and Wastes

Fig. 9735

Straight Iron Pipe, Wheel Handle
Reversible Pattern

Size, inches	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Fig. 9734 Rough, per dozen	25.80	29.40	35.40	43.80	76.80	142.80	188.40	351.60
Fig. 9734 Finished, per dozen	27.60	31.80	37.80	46.20	82.80	150.00	199.20	369.60
Fig. 9734 Nickel-plated, per dozen	31.20	35.40	41.40	50.40	88.80	160.80	214.20	399.60
Fig. 9735 Rough, per dozen	28.80	32.40	38.40	46.80	84.00	156.00	208.20	381.00
Fig. 9735 Finished, per dozen	30.60	34.80	40.80	49.20	90.00	163.20	219.00	399.00
Fig. 9735 Nickel-plated, per dozen	34.20	38.40	44.40	53.40	96.00	174.00	234.00	429.00

Compression Shower Stops

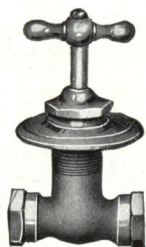


Fig. 9740

Compression Shower Stop, Iron Pipe Rough Body, Polished Flange and Handle, Threaded Flange.

Size, inch.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Fig. 9740 Finished, per dozen.....	27.00	30.60	38.40	48.00	90.00
Fig. 9740 Nickel-plated, per dozen.....	30.60	34.20	42.00	52.20	96.00
Fig. 9741 Finished, per dozen.....	40.20	44.40	52.20	62.40	.....
Fig. 9741 Nickel-plated, per dozen.....	43.80	48.00	55.80	66.60	.....

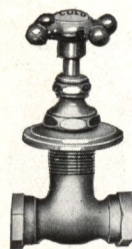


Fig. 9741

Compression Shower Stop, Iron Pipe Rough Body, Polished Flange and China Index Handle and Stuffing Box, Threaded Flange.

Self-closing Shower Stop

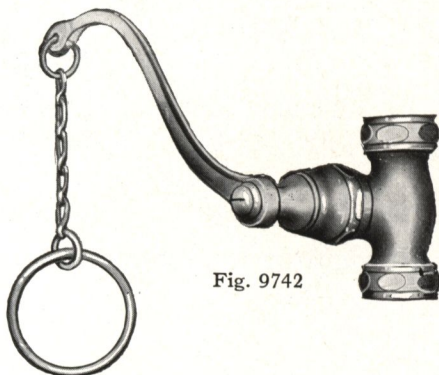


Fig. 9742

With Lever, Chain and Rings, Iron Pipe

Size, inch.....	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Fig. 9742 Finished, per dozen.....	52.80	59.40	76.20	115.20
Fig. 9742 Nickel-plated, per dozen.....	58.80	65.40	84.00	125.40

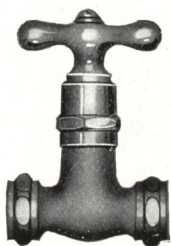


Fig. 9743. Peerless

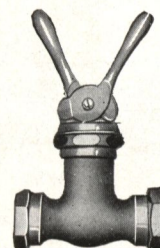
Self-closing Stops
Iron Pipe

Fig. 9744. Doherty

Size, inch.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Fig. 9743 Finished, per dozen.....	29.40	30.60	37.20	47.40	79.20
Fig. 9743 Nickel-plated, per dozen.....	35.40	36.60	43.20	55.20	89.40
Fig. 9744 Finished, per dozen.....	34.20	35.40	42.00	52.20	84.00
Fig. 9744 Nickel-plated, per dozen.....	40.20	41.40	48.00	60.00	94.20

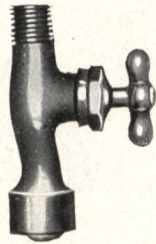


Fig. 9750

Compression Urinal Cocks

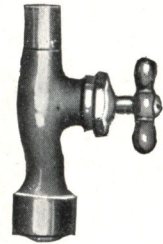


Fig. 9751

Iron Pipe Tee Handle with Bell for China Horn

Lead Pipe Tee Handle with Bell for China Horn

Size, inch.....	$\frac{1}{2}$	
Fig. 9750 Finished, Iron Pipe, per dozen.....		27.00
Fig. 9750 Nickel-plated, Iron Pipe, per dozen.....		30.60
Fig. 9751 Finished, Lead Pipe, per dozen.....		28.20
Fig. 9751 Nickel-plated, Lead Pipe, per dozen.....		31.80
If with Stuffing Box, add per dozen.....		4.80
If with Union Nut for Urinal with Brass Spud, add per dozen.....		7.20

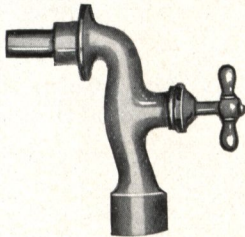


Fig. 9752

Solid Flange with Thimble for Lead Pipe Tee Handle with Bell for China Horn

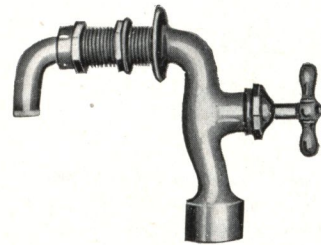


Fig. 9753

Solid Flange, Nut and Bent Coupling for Lead Pipe Tee Handle with Bell for China Horn

Size, inch.....	$\frac{1}{2}$	
Fig. 9752 Finished, per dozen.....		37.80
Fig. 9752 Nickel-plated, per dozen.....		41.40
Fig. 9753 Finished, per dozen.....		45.00
Fig. 9753 Nickel-plated, per dozen.....		48.60
If with Stuffing Box, add per dozen.....		4.80

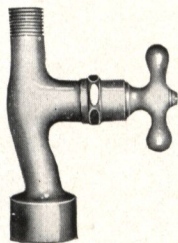


Fig. 9754

Peerless, Iron Pipe

Size, inch.....	$\frac{1}{2}$	
Finished, Iron Pipe, per dozen.....		37.80
Nickel-plated, Iron Pipe, per dozen.....		43.80
Finished (not illustrated) Lead Pipe, per dozen...		39.00
Nickel-plated (not illustrated) Lead Pipe, per doz.		45.00
Finished (not illustrated) Flange and Thimble, per dozen.....		48.60
Nickel-plated (not illustrated) Flange and Thimble, per dozen.....		54.60
Finished (not illustrated) Flange and Bent Coupling, per dozen.....		55.80
Nickel-plated (not illustrated) Flange and Bent Coupling, per dozen.....		61.80

Self-closing Urinal Cocks

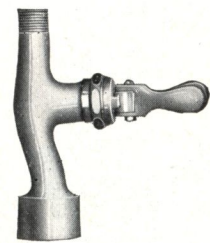


Fig. 9755

Doherty, Iron Pipe

Size, inch.....	$\frac{1}{2}$	
Finished, Iron Pipe, per dozen.....		42.60
Nickel-plated, Iron Pipe, per dozen.....		48.60
Finished (not illustrated) Lead Pipe, per dozen..		43.80
Nickel-plated (not illustrated) Lead Pipe, per doz.		49.80
Finished (not illustrated) Flange and Thimble, per dozen.....		53.40
Nickel-plated (not illustrated) Flange and Thimble, per dozen.....		59.40
Finished (not illustrated) Flange and Bent Coupling, per dozen.....		60.60
Nickel-plated (not illustrated) Flange and Bent Coupling, per dozen.....		66.60

Compression Pantry Cocks

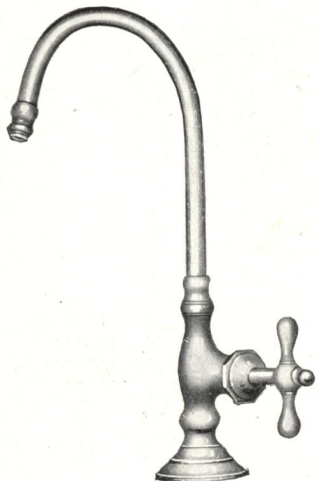


Fig. 9760

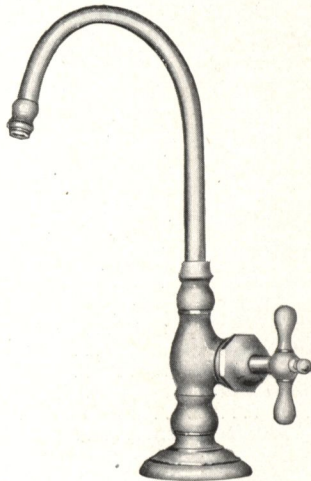
No. 1 Tee
Handle

Fig. 9761

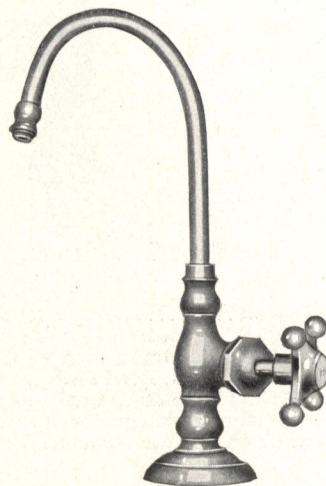
No. 2 Tee
Handle

Fig. 9762

No. 2 China Index Handle
and Stuffing Box

	Plain	Hose
Fig. 9760 Nickel-plated, Tee Handle, per dozen.....	45.00	48.60
Fig. 9760A Nickel-plated, Cross Handle, per dozen.....	48.00	51.60
Fig. 9761 Nickel-plated, Tee Handle, per dozen.....	54.00	57.60
Fig. 9761A Nickel-plated, Cross Handle, per dozen.....	57.00	60.60
Fig. 9762 Nickel-plated, China Index Handle, per dozen.....	70.20	75.00

Add to Nos. 1 and 2 for Stuffing Box, per dozen 4.80

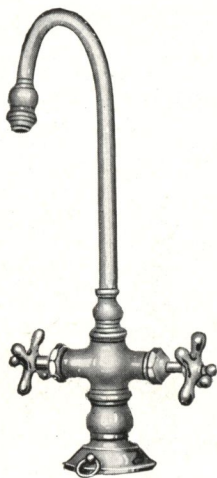


Fig. 9763

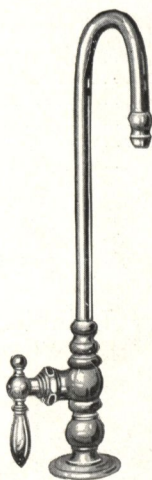
No. 8 Double Cross
Handles

Fig. 9764

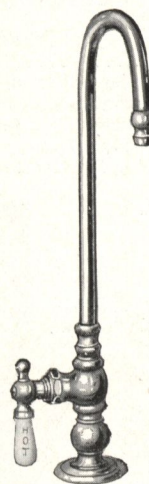
No. 1 Quick Opening with
Plain Lever Handle

Fig. 9765

No. 1 Quick Opening with
China Lever Handle

	Plain	Hose
Fig. 9763 Nickel-plated, Cross Handles, each.....	12.50	12.80
Fig. 9763A Nickel-plated, China Index Handles, each.....	14.10	14.40
Add for Stuffing Box, each.....	1.40	1.40
Fig. 9764 Nickel-plated, Plain Lever Handle, per dozen.....	63.00	66.60
Fig. 9765 Nickel-plated, China Lever Handle, per dozen.....	69.00	72.60

Furnished regularly with $\frac{1}{4}$ -inch Iron Pipe Male Tail Pieces.

Fuller Pantry Cocks

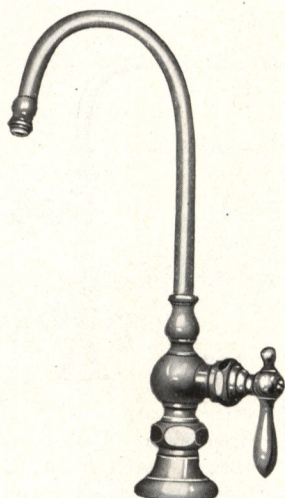


Fig. 9770

No. 0 Plain Handle with Union

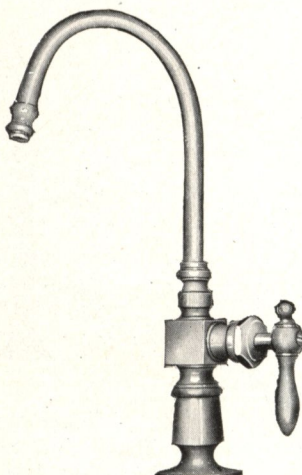


Fig. 9771

No. 1 Plain Handle

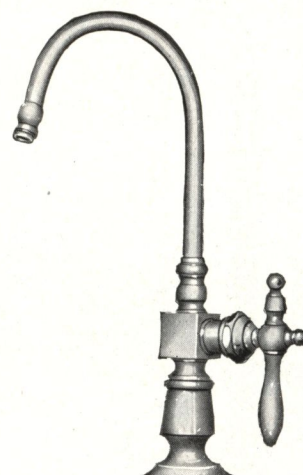


Fig. 9772

No. 2 Plain Handle

	Plain	Hose
Fig. 9770 Nickel-plated, Plain Handle, per dozen.....	60.00	63.60
Fig. 9770A Nickel-plated, China Handle, per dozen.....	69.00	72.60
Fig. 9771 Nickel-plated, Plain Handle, per dozen.....	54.00	57.60
Fig. 9771A Nickel-plated, China Handle, per dozen.....	63.00	66.60
Fig. 9772 Nickel-plated, Plain Handle, per dozen.....	60.00	63.60
Fig. 9772A Nickel-plated, China Handle, per dozen.....	69.00	72.60

Furnished regularly with $\frac{1}{4}$ -inch Iron Pipe Male Tail Pieces.

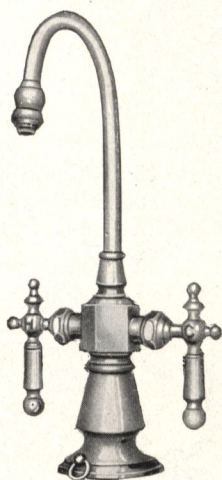


Fig. 9773

No. 8
Double Plain
Handles

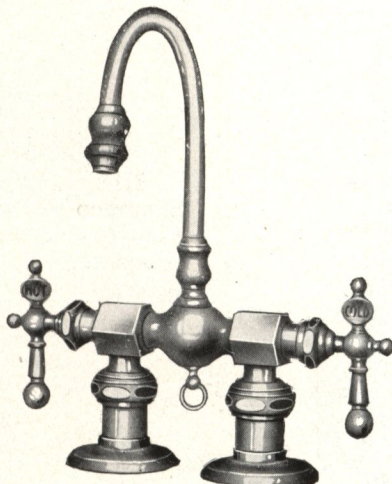


Fig. 9774

No. 11 Double Plain
Handles, $3\frac{3}{8}$ -inch
Centers

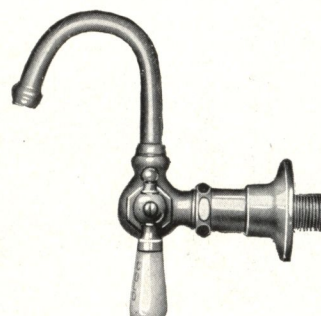


Fig. 9775A

Bracket Cock with China
Handle and Stationary Spout
Center Spout to wall, 6 inches

	Plain	Hose
Fig. 9773 Nickel-plated, Plain Handle, each.....	12.75	13.05
Fig. 9773A Nickel-plated, China Handles, each.....	14.25	14.55
Fig. 9774 Nickel-plated, Plain Handles, each.....	12.00	13.30
Fig. 9774A Nickel-plated, China Handles, each.....	13.50	13.80
Fig. 9775 Nickel-plated Handles, per dozen.....	57.00	60.60
Fig. 9775A Nickel-plated, China Handles, per dozen.....	66.00	69.60

Shampoo Fixtures

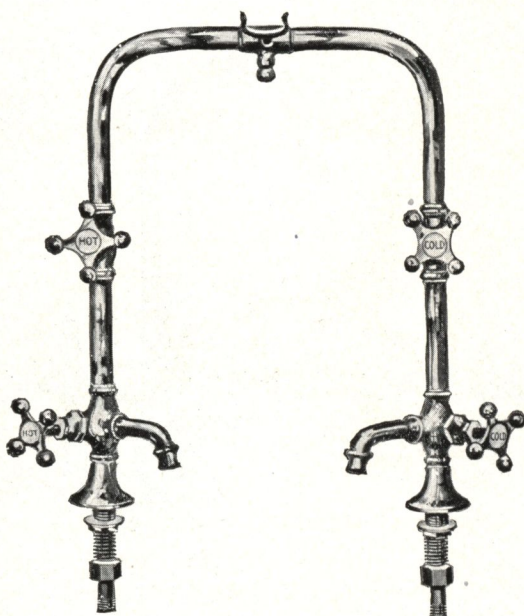


Fig. 9780

Nickel-plated Compression Combination Basin and Shampoo Fixture, with China Index Handles, Hose and Sprinkler Complete.

Made to suit center to center of Cock Holes.
Each..... 15.00

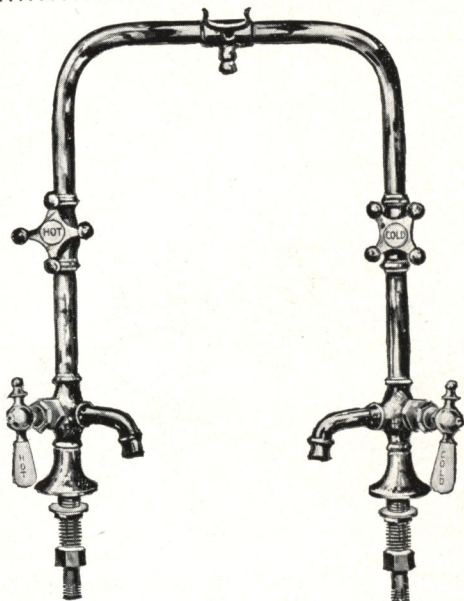


Fig. 9783

Nickel-plated Combination Basin and Shampoo Fixture, with Compression China Index Valves and Quick Compression Basin Cocks, with China Index Handles, Hose and Sprinkler Complete.

Made to suit center to center of Cock Holes.
Each..... 18.00

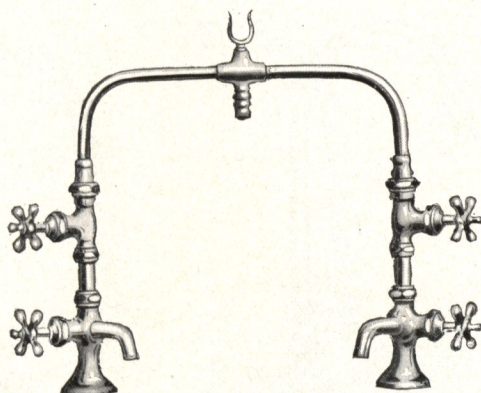


Fig. 9781

Nickel-plated Compression Combination Basin and Shampoo Fixture, with Plain Cross Handles, Hose and Sprinkler complete.

12-inch Centers

Nickel-plated, with Plain Cross Handles, each.... 27.00
Nickel-plated, with China Index Handles, each... 29.00
Add for Stuffing Boxes (four)..... 5.60

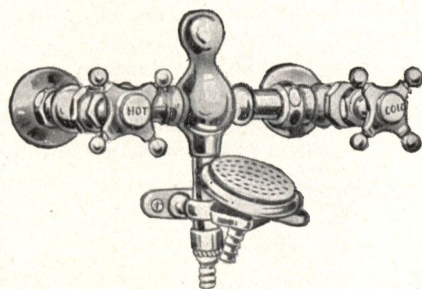


Fig. 9782

Nickel-plated Compression Combination Shampoo Cock, with China Index Handles and Flanges for wall supply, Hose and Sprinkler complete.

Each..... 15.00

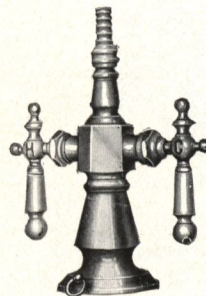


Fig. 9784

Nickel-plated Fuller Double Shampoo Cock with Plain Handles, Chain Stay, Hose and Sprinkler and $\frac{1}{4}$ -inch Iron Pipe Tail Pieces.

Each..... 13.50
Add for China Handles..... 1.50

Slop Sink Cocks

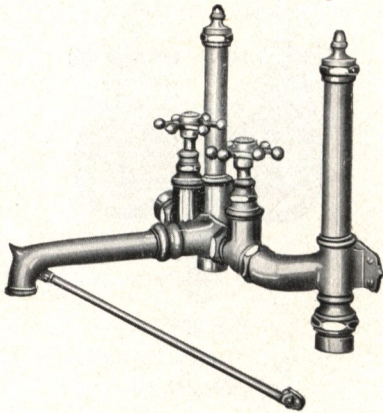


Fig. 9790

Compression Double Slop Sink Fixture, with Six Ball China Index Handles, Pail Hook and Wall Brace, $\frac{3}{4}$ -inch Female Iron Pipe Unions on Supplies

Supplies $11\frac{1}{2}$ -inch Centers. Center of Spout to wall, $11\frac{1}{2}$ inches.

Nickel-plated, each..... 45.00

With Short Spout, center of Spout to wall, $8\frac{3}{4}$ inches, Nickel-plated, each..... 43.00

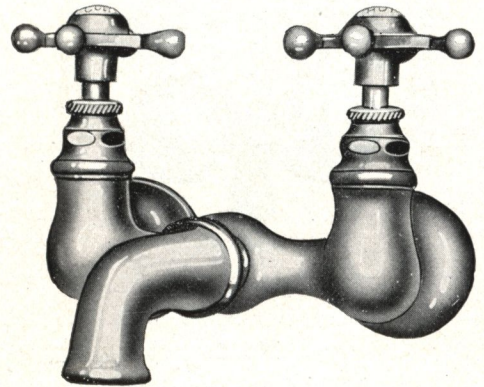


Fig. 9791

Compression Double Slop Sink Cock, with Four-arm China Index Handles, with Unions in Shanks and Male or Female Flanges for $\frac{1}{2}$ -inch iron pipe.

Supplies $4\frac{1}{2}$ -inch Centers. Center of Spout to wall, $7\frac{1}{2}$ inches.

Nickel-plated, each..... 13.00

If with Long Spout, Pail Hook and Brace, $10\frac{1}{4}$ inches center of Spout to wall.

Nickel-plated, each..... 15.00

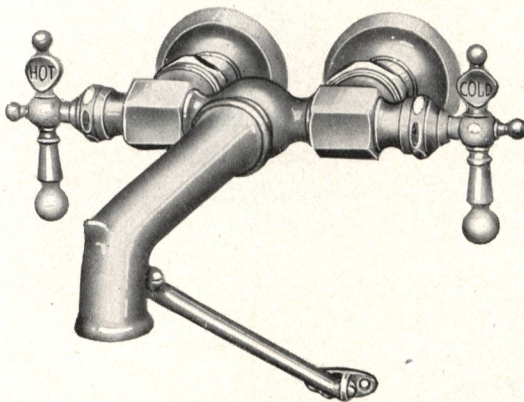


Fig. 9792

Fuller Double Slop Sink Cock, with Plain Handles, Pail Hook and Wall Brace, with Unions in Shanks and Male or Female Flanges for iron pipe.

Supplies $4\frac{1}{2}$ -inch Centers. Center of Spout to wall, 10 inches.

Nickel-plated, each..... 12.50

With Short Spout, center of Spout to wall, $7\frac{1}{2}$ inches, Nickel-plated, each..... 10.50

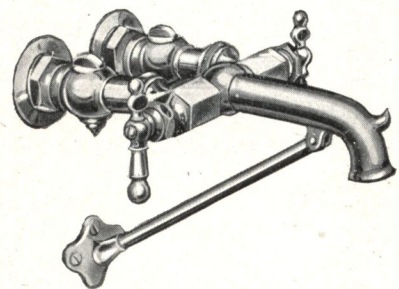


Fig. 9793

Fuller Double Slop Sink Cock, with Plain Handles, Pail Hook and Wall Brace, with Unions and Ground Key Stops in Shanks and Male or Female Flanges for iron pipe.

Supplies $4\frac{1}{2}$ -inch Centers. Center of Spout to wall, 12 inches.

Nickel-plated, each..... 20.00

Add for China Handles..... 1.50

Compression Double Bath Cocks

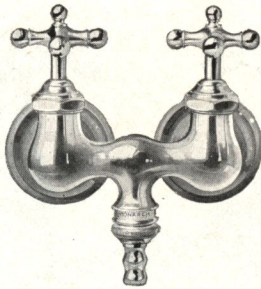


Fig. 9800

No. 9

Plain Cross Handles
3 $\frac{3}{8}$ -inch Centers

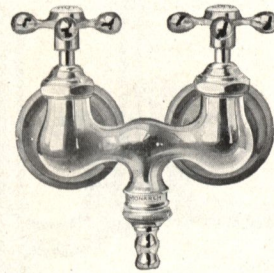


Fig. 9801

No. 9

China Index Handles
3 $\frac{3}{8}$ -inch Centers

- Fig. 9800 Nickel-plated, with Ball Elbows for $\frac{1}{2}$ -inch iron pipe, each 4.85
 Fig. 9801 Nickel-plated, with Ball Elbows for $\frac{1}{2}$ -inch iron pipe, each 7.00

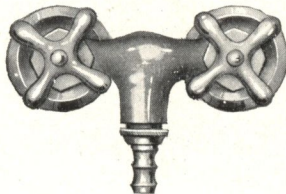


Fig. 9802

No. 9

Plain Cross Handles
3 $\frac{3}{8}$ -inch Centers
 $\frac{1}{2}$ -inch Size

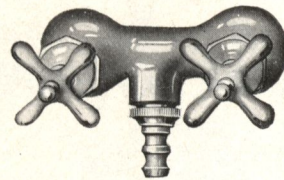


Fig. 9803

No. 0

Plain Cross Handles
3 $\frac{3}{8}$ -inch Centers
 $\frac{1}{2}$ -inch Size

- Fig. 9802 Nickel-plated, with Locknuts, less Couplings, each 5.55
 Fig. 9803 Nickel-plated, with Locknuts, less Couplings, each 5.00

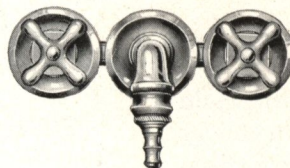


Fig. 9804

No. 5

Plain Cross Handles
5 $\frac{1}{2}$ -inch Centers

- Fig. 9804 Nickel-plated, with Rough Lead or Iron Pipe Male Couplings, each 7.60

Quick-Opening Compression Double Bath Cocks

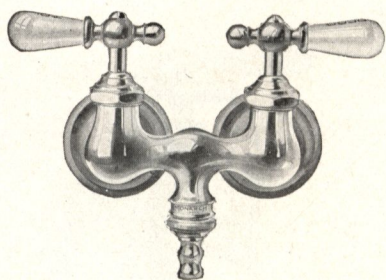


Fig. 9810

No. 19
China Index Handles
3 $\frac{3}{8}$ -inch Centers

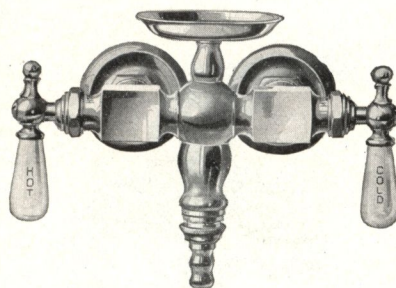


Fig. 9811

No. 14 $\frac{1}{2}$
China Index Handles
3 $\frac{3}{8}$ -inch Centers

Fig. 9810 Nickel-plated, with Ball Elbows, each.....	9.75
Fig. 9811 Nickel-plated, with Ball Elbows, each.....	11.75

Fuller Double Bath Cocks

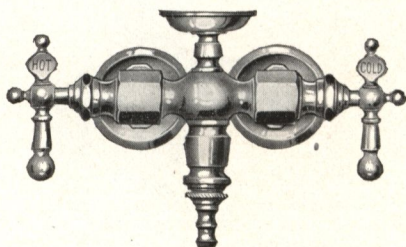


Fig. 9812

No. 4 $\frac{1}{2}$
Plain Handles
3 $\frac{3}{8}$ -inch Centers

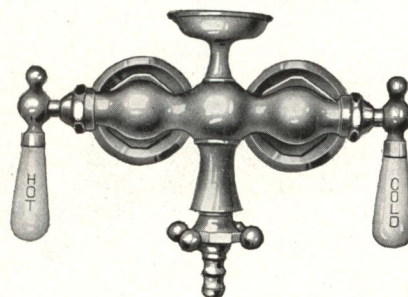


Fig. 9813

No. 4 $\frac{1}{2}$
China Index Handles
3 $\frac{3}{8}$ -inch Centers

Fig. 9812 Nickel-plated, Square Body, with Ball Elbows, each.....	7.50
Fig. 9813 Nickel-plated, Round Body, with Ball Elbows, each.....	11.00

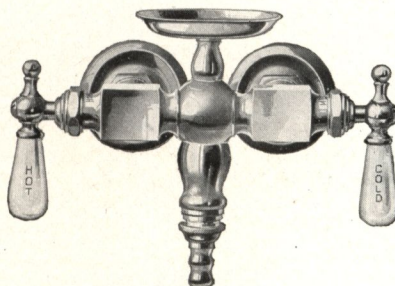


Fig. 9814

No. 4 $\frac{1}{2}$ Heavy
China Index Handles
3 $\frac{3}{8}$ -inch Centers

Fig. 9814 Nickel-plated, Square Body, with Ball Elbows, each.....	6.95
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Compression Bath Bibbs With Stuffing Box

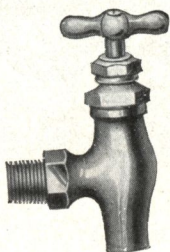


Fig. 9820

Iron Pipe

Size, inch.....	1/2	5/8	3/4	1
Fig. 9820 Finished, per dozen.....	29.40	36.60	51.00	85.80
Fig. 9820 Nickel-plated, per dozen.....	33.00	40.20	55.20	91.80
Fig. 9821 Finished, per dozen.....	35.40	43.80	60.00	99.00
Fig. 9821 Nickel-plated, per dozen.....	39.00	47.40	64.20	105.00

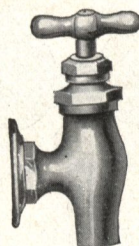


Fig. 9821

Solid Flange Female Iron Pipe

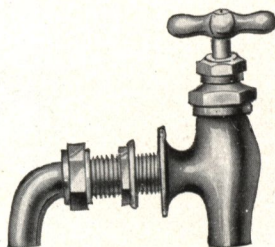


Fig. 9822

Solid Flange with Nut and Bent Coupling

Size, inch.....	1/2	5/8	3/4	1
Fig. 9822 Finished, per dozen.....	44.40	56.40	78.00	130.80
Fig. 9822 Nickel-plated, per dozen.....	48.00	60.00	82.20	136.80

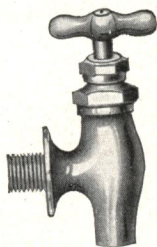


Fig. 9823

Solid Flange Male Iron Pipe

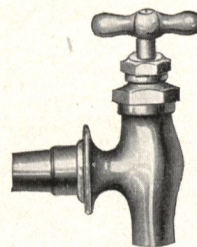


Fig. 9824

Solid Flange and Thimble—Lead Pipe

Size, inch.....	1/2	5/8	3/4	1
Fig. 9823 Finished, per dozen.....	35.40	43.80	60.00	99.00
Fig. 9823 Nickel-plated, per dozen.....	39.00	47.40	64.20	105.60
Fig. 9824 Finished, per dozen.....	38.40	47.40	64.20	105.60
Fig. 9824 Nickel-plated, per dozen.....	42.00	51.00	68.40	111.60

Ground Key Bibbs

Plain Lever Handle

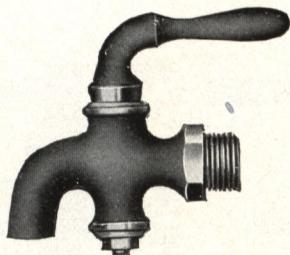


Fig. 9830

Plain, Iron Pipe

Size, inches.....	1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Rough, per dozen.....	19.80	20.40	21.00	29.40	36.00	52.80	89.40	149.40	258.00	408.00	540.00	960.00	1200.00
Finished, per dozen.....	24.60	25.20	25.80	35.40	45.00	64.80	107.40	179.40	300.00	468.00	624.00	1080.00	1380.00
Nickel-plated, per dozen.....	29.40	30.00	30.60	41.40	54.00	76.80	125.40	209.40	342.00	528.00	708.00	1200.00	1560.00

Fig. 9830

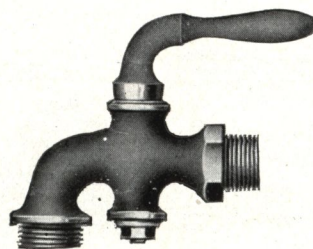


Fig. 9831

Hose, Iron Pipe

Fig. 9851

Size, inches.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Rough, per dozen.....	23.40	24.00	32.40	39.00	60.00	100.20	164.40	280.20	447.00	594.00	1056.00	1344.00	
Finished, per dozen.....	28.20	28.80	38.40	48.00	72.00	118.20	194.40	322.20	507.00	678.00	1176.00	1524.00	
Nickel-plated, per dozen.....	33.00	33.60	44.40	57.00	84.00	136.20	224.40	364.20	567.00	762.00	1296.00	1704.00	

Fig. 9831

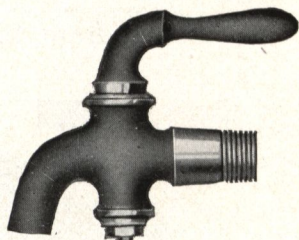


Fig. 9832

Plain, S. O. T.

Size, inches.....	1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Rough, per dozen.....	22.20	22.80	23.40	32.40	40.20	60.00	100.20	164.40	288.00	453.00	606.00	1062.00	1350.00
Finished, per dozen.....	27.00	27.60	28.20	38.40	49.20	72.00	118.20	194.40	330.00	513.00	690.00	1182.00	1530.00
Nickel-plated, per dozen.....	31.80	32.40	33.00	44.40	58.20	84.00	136.20	224.40	372.00	573.00	774.00	1302.00	1710.00

Fig. 9832

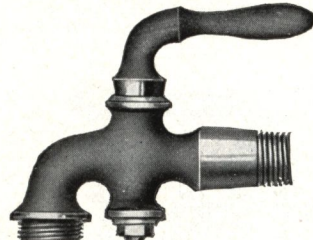


Fig. 9833

Hose, S. O. T.

Size, inches.....	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Rough, per dozen.....	25.80	26.40	35.40	43.20	67.20	111.00	179.40	310.20	492.00	660.00	1158.00	1494.00
Finished, per dozen.....	30.60	31.20	41.40	52.20	79.20	129.00	209.40	352.20	552.00	744.00	1278.00	1674.00
Nickel-plated, per dozen.....	35.40	36.00	47.40	61.20	91.20	147.00	239.40	394.20	612.00	828.00	1398.00	1854.00
Add for Hexagon, per dozen.....	1.80	1.80	1.80	1.80	3.00	4.20	6.00	7.80	18.00	30.00	48.00	72.00

Fig. 9833

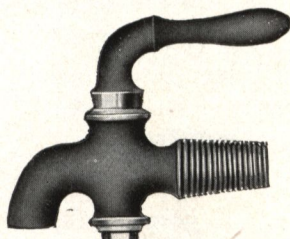


Fig. 9834

Screwed, for Wood

Size, inches.....	1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Rough, per dozen.....	23.40	24.60	25.80	34.80	42.60	63.60	109.20	179.40	306.00	483.00	651.00	1122.00	1440.00
Finished, per dozen.....	28.20	29.40	30.60	40.80	51.60	75.60	127.20	209.40	348.00	543.00	735.00	1242.00	1620.00
Nickel-plated, per dozen.....	33.00	34.20	35.40	46.80	60.60	87.60	145.20	239.40	390.00	603.00	819.00	1362.00	1800.00

Fig. 9834

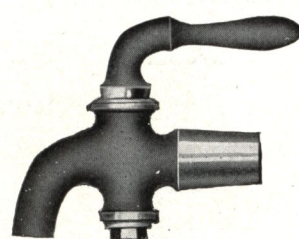


Fig. 9835

Plain, Lead Pipe

Size, inches.....	1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Rough, per dozen.....	21.00	21.60	22.20	31.20	38.40	56.40	94.80	158.40	273.00	438.00	585.00	1020.00	1290.00
Finished, per dozen.....	25.80	26.40	27.00	37.20	47.40	68.40	112.80	188.40	315.00	498.00	669.00	1140.00	1470.00
Nickel-plated, per dozen.....	30.60	31.20	31.80	43.20	56.40	80.40	130.80	218.40	357.00	558.00	753.00	1260.00	1650.00
Add for Hose End, per dozen.....		3.00	3.00	3.00	3.00	7.20	10.80	15.00	22.20	39.00	54.00	96.00	144.00

Fig. 9835

Monarch Patent Cap Stops.

Malleable Reversible Interchangeable Handles

Ground Key—Flat Way

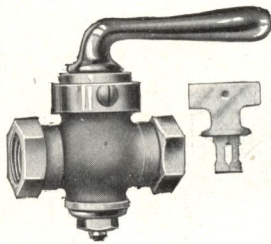


Fig. 9840

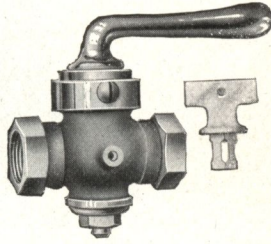
Stop
Iron Pipe

Fig. 9841

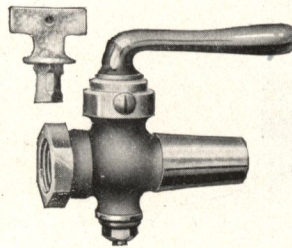
Stop and Waste
Iron Pipe

Fig. 9842

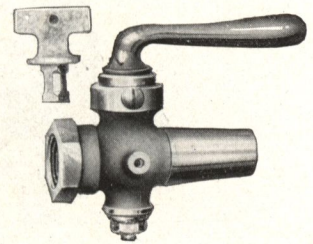
Stop
Lead and Iron Pipe

Fig. 9843

Stop and Waste
Lead and Iron Pipe

Size, inches.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Fig. 9840 Rough Stop Iron Pipe, per dozen.....	20.40	21.00	29.40	36.00	52.80	89.40	149.40	258.00
Fig. 9841 Rough Stop and Waste Iron Pipe, per doz....	21.00	21.60	30.00	36.60	54.00	91.20	152.40	264.00
Fig. 9842 Rough Stop Lead and Iron Pipe, per dozen.....	23.40	23.40	33.00	40.80	60.00	100.20	167.40	288.00
Fig. 9843 Rough S. and W. L. and I. Pipe, per dozen....	24.00	24.00	33.60	41.40	61.20	102.00	170.40	294.00

Round Way

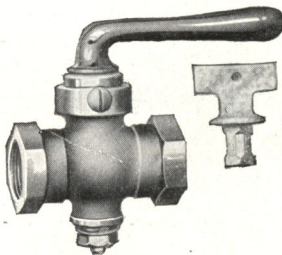


Fig. 9844

Stop, Iron Pipe

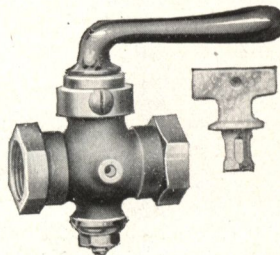


Fig. 9845

Stop and Waste, Iron Pipe

Hydrant Cock

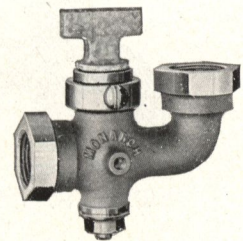


Fig. 9846

Tee Handle, Iron Pipe

Stop, Iron Pipe							
Size, inches.....	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Fig. 9844 Rough Stop Round Way Iron Pipe, per dozen.....	26.40	36.00	46.20	73.80	120.60	197.40	342.00
Fig. 9845 Rough S and W Round Way Iron Pipe, per dozen..	27.00	36.60	46.80	75.00	122.40	200.40	348.00
Size, inch.....	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1			
Fig. 9846 Rough Hydrant Cock, Tee Handle Iron Pipe, per dozen.....	25.80	36.60	45.00	64.80			

Monarch Plumbers' Globe and Angle Valves

Iron Wheel Handle—Red Brass

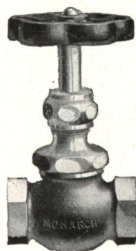


Fig. 9847. Globe

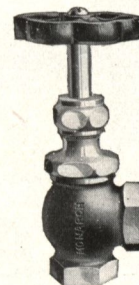


Fig. 9848. Angle

Size, inch.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1
Fig. 9847 Globe Valve, each.....	.77	1.00	1.26	2.80
Fig. 9848 Angle Valve, each.....	.77	1.00	1.26	2.80

Tee Handle Stops and Stops and Wastes

Solid Handle—Nut and Washer

Flat Way and Round Way

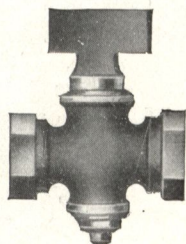


Fig. 9850

Stop, Iron Pipe, Female

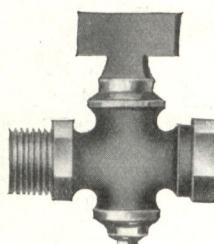


Fig. 9851

Stop, Iron Pipe, Male and Female

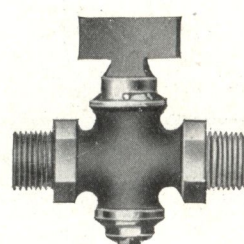


Fig. 9852

Stop, Iron Pipe, Male

Flat Way

Size, inches.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Fig. 9850 Rough, per dozen.....	19.80	20.40	21.00	29.40	36.00	52.80	89.40	149.40	258.00
Fig. 9851 Rough, per dozen.....	23.40	24.00	24.60	34.20	40.80	58.80	98.40	164.40	282.00
Fig. 9852 Rough, per dozen.....	27.00	27.60	28.20	39.00	45.00	64.80	107.40	179.40	306.00

Fig. 9853

Tee Handle Round Way Stop, Iron Pipe, Female

Not Illustrated.

Size, inches.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Fig. 9853 Rough, per dozen.....	24.00	25.20	26.40	36.00	46.20	73.80	120.60	197.40	342.00

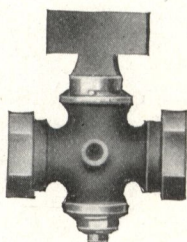


Fig. 9854

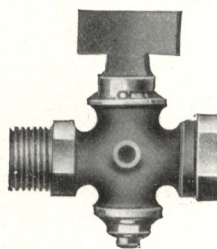
Stop and Waste, Iron
Pipe, Female

Fig. 9855

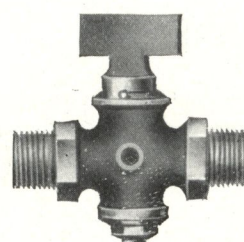
Stop and Waste, Iron Pipe
Male and Female

Fig. 9856

Stop and Waste, Iron
Pipe, Male

Flat Way

Size, inches.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Fig. 9854 Rough, per dozen.....	20.40	21.00	21.60	30.00	36.60	54.00	91.20	152.40	264.00
Fig. 9855 Rough, per dozen.....	24.00	24.60	25.20	34.80	41.40	60.00	100.20	167.40	288.00
Fig. 9856 Rough, per dozen.....	27.60	28.20	28.80	39.60	46.20	66.00	109.20	182.40	312.00

Fig. 9857

Round Way

Not Illustrated.

Size, inches.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Fig. 9857 Rough, per dozen.....	24.60	25.80	27.00	36.60	46.80	75.00	122.40	200.40	348.00

Tee Handle Stops and Stops and Wastes

Solid Handle—Nut and Washer

Flat Way and Round Way

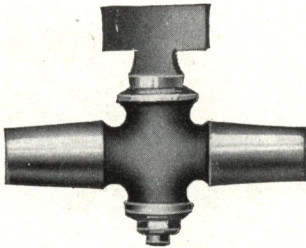


Fig. 9860

Stop
Lead Pipe
Both Ends

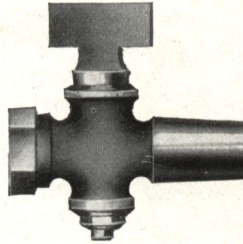


Fig. 9861

Stop
Lead and Female
Iron Pipe

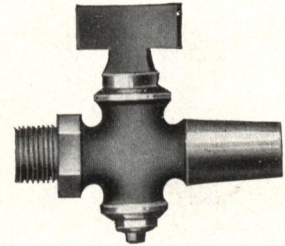


Fig. 9862

Stop
Lead and Male
Iron Pipe

Size, inches.....	1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	2
Fig. 9860 Rough, per dozen.....	22.20	22.80	23.40	33.00	40.80	60.00	100.20	167.40	288.00
Fig. 9861 Rough, per dozen.....	22.20	22.80	23.40	33.00	40.80	60.00	100.20	167.40	288.00
Fig. 9862 Rough, per dozen.....	25.80	26.40	27.00	37.80	45.60	66.00	109.20	182.40	312.00

Figs. 9863-4

Tee Handle Round Way Stops

Fig. 9863 Lead Pipe. Fig. 9864 Lead and Female Iron Pipe

Not Illustrated

Size, inches.....	1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	2
Fig. 9863 Rough, per dozen.....	26.40	27.60	28.80	39.60	51.00	81.00	131.40	215.40	372.00
Fig. 9864 Rough, per dozen.....	26.40	27.60	28.80	39.60	51.00	81.00	131.40	215.40	372.00

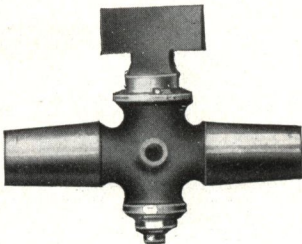


Fig. 9865

Stop and Waste
Lead Pipe
Both Ends

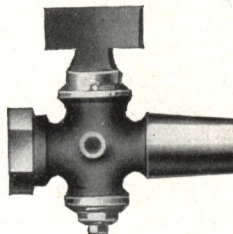


Fig. 9866

Stop and Waste
Lead and Female
Iron Pipe

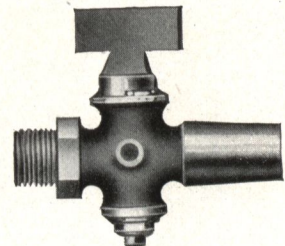


Fig. 9867

Stop and Waste
Lead and Male
Iron Pipe

Size, inches.....	1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	2
Fig. 9865 Rough, per dozen.....	22.80	23.40	24.00	33.60	41.40	61.20	102.00	170.40	294.00
Fig. 9866 Rough, per dozen.....	22.80	23.40	24.00	33.60	41.40	61.20	102.00	170.40	294.00
Fig. 9867 Rough, per dozen.....	26.40	27.00	27.60	38.40	46.20	67.20	111.00	185.40	318.00

Figs. 9868-9

Tee Handle Round Way Stop and Waste

Fig. 9868 Lead Pipe. Fig. 9869 Lead and Female Iron Pipe

Not Illustrated

Size, inches.....	1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	2
Fig. 9868 Rough, per dozen.....	27.00	28.20	29.40	40.20	51.60	82.20	133.20	218.40	378.00
Fig. 9869 Rough, per dozen.....	27.00	28.20	29.40	40.20	51.60	82.20	133.20	218.40	378.00

Lever Handle Stops and Stops and Waste

Solid Handle—Nut and Washer

Flat Way and Round Way

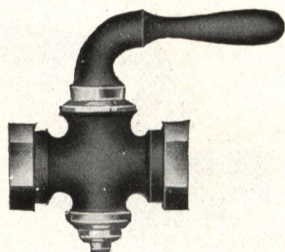


Fig. 9870

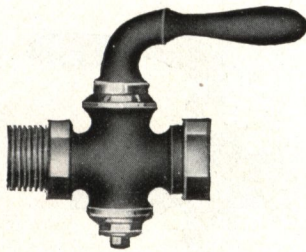
Stop
Iron Pipe
Female

Fig. 9871

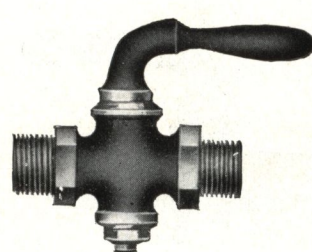
Stop
Iron Pipe
Male and Female

Fig. 9872

Stop
Iron Pipe
Male

Flat Way

Size, inches.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Fig. 9870 Rough, per dozen.....	19.80	20.40	21.00	29.40	36.00	52.80	89.40	149.40	258.00
Fig. 9871 Rough, per dozen.....	23.40	24.00	24.60	34.20	40.80	58.80	98.40	164.40	282.00
Fig. 9872 Rough, per dozen.....	27.00	27.60	28.20	39.00	45.60	64.80	107.40	179.40	306.00

Fig. 9873

Lever Handle Round Way Stop Iron Pipe Female

Not Illustrated

Size, inches.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Fig. 9873 Rough, per dozen.....	24.00	25.20	26.40	36.00	46.20	73.80	120.60	197.40	342.00

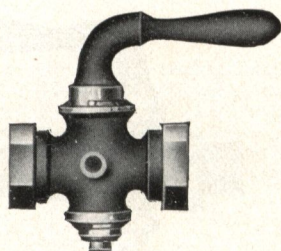


Fig. 9874

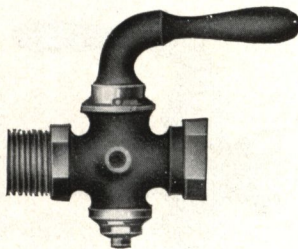
Stop and Waste
Iron Pipe
Female

Fig. 9875

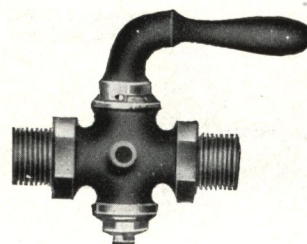
Stop and Waste
Iron Pipe
Male and Female

Fig. 9876

Stop and Waste
Iron Pipe
Male

Flat Way

Size, inches.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Fig. 9874 Rough, per dozen.....	20.40	21.00	21.60	30.00	36.60	54.00	91.20	152.40	264.00
Fig. 9875 Rough, per dozen.....	24.00	24.60	25.20	34.80	41.40	60.00	100.20	167.40	288.00
Fig. 9876 Rough, per dozen.....	27.60	28.20	28.80	39.60	46.20	66.00	109.20	182.40	312.00

Fig. 9877

Lever Handle Round Way Stop and Waste

Iron Pipe, Female

Not Illustrated

Size, inches.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Fig. 9877 Rough, per dozen.....	24.60	25.80	27.00	36.60	46.80	75.00	122.40	200.40	348.00

Lever Handle Stops and Stops and Wastes

Solid Handle—Nut and Washer

Flat Way and Round Way

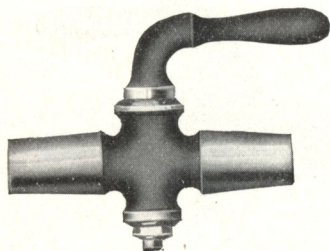


Fig. 9880

Stop
Lead Pipe
Both Ends

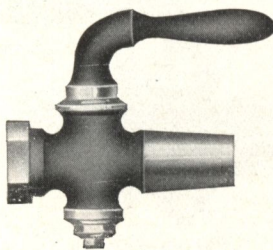


Fig. 9881

Stop
Lead and Female
Iron Pipe

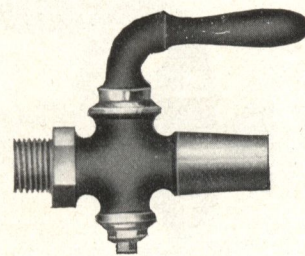


Fig. 9882

Stop
Lead and Male
Iron Pipe

Size, inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Fig. 9880 Rough, per dozen	22.20	22.80	23.40	33.00	40.80	60.00	100.20	167.40	288.00
Fig. 9881 Rough, per dozen	22.20	22.80	23.40	33.00	40.80	60.00	100.20	167.40	288.00
Fig. 9882 Rough, per dozen	25.80	26.40	27.00	37.80	45.60	66.00	109.20	182.40	312.00

Figs. 9883-4

Lever Handle Round Way Stops

Fig. 9883 Lead Pipe. Fig. 9884 Lead and Iron Pipe, Female

Size, inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Fig. 9883 Rough, per dozen	26.40	27.60	28.80	39.60	51.00	81.00	131.40	215.40	372.00
Fig. 9884 Rough, per dozen	26.40	27.60	28.80	39.60	51.00	81.00	131.40	215.40	372.00

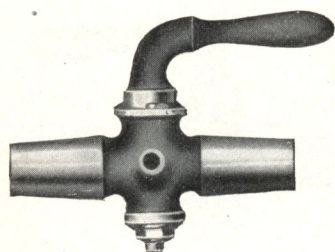


Fig. 9885

Stop and Waste
Lead Pipe
Both Ends

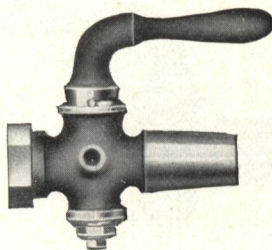


Fig. 9886

Stop and Waste
Lead and Female
Iron Pipe

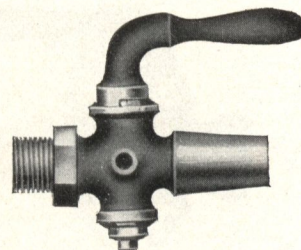


Fig. 9887

Stop and Waste
Lead and Male
Iron Pipe

Size, inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Fig. 9885 Rough, per dozen	22.80	23.40	24.00	33.60	41.40	61.20	102.00	170.40	294.00
Fig. 9886 Rough, per dozen	22.80	23.40	24.00	33.60	41.40	61.20	102.00	170.40	294.00
Fig. 9887 Rough, per dozen	26.40	27.00	27.60	38.40	46.20	67.20	111.00	185.40	318.00

Figs. 9888-9

Lever Handle Round Way Stop and Waste

Fig. 9888 Lead Pipe. Fig. 9889 Lead and Iron Pipe, Female

Size, inches	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Fig. 9888 Rough, per dozen	27.00	28.20	29.40	40.20	51.60	82.20	133.20	218.40	378.00
Fig. 9889 Rough, per dozen	27.00	28.20	29.40	40.20	51.60	82.20	133.20	218.40	378.00

Not Illustrated

Compression Work Handles

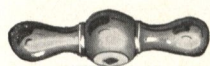


Fig. 9890

Tee

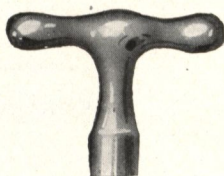


Fig. 9891

Loose Key



Fig. 9892

Wheel

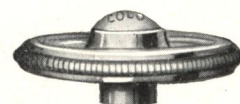


Fig. 9893

Wheel with China Index

Size, inch	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Fig. 9890 Finished or Nickel-plated, per dozen	2.40	2.40	3.00	3.00	6.00
Fig. 9891 Finished or Nickel-plated, per dozen	6.00	6.00	6.60	6.60	15.00
Fig. 9892 Finished or Nickel-plated, per dozen	7.20	7.80	9.00	10.20	30.00
Fig. 9893 Finished or Nickel-plated, per dozen	14.40	15.00	16.20	17.40	36.60

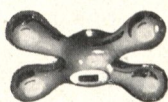


Fig. 9894

Cross



Fig. 9895

Small Four-ball China Index

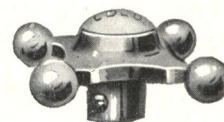


Fig. 9896

Large Four-ball China Index

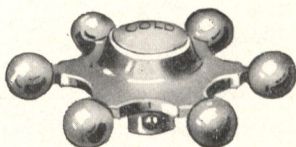


Fig. 9897

Six-ball China Index

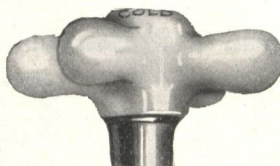


Fig. 9898

Four-arm All China

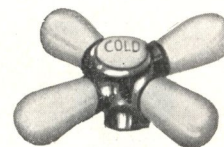


Fig. 9899

China Tip Four-arm China Index

Fig. 9894 Finished or Nickel-plated, per dozen	5.40
Fig. 9895 Finished or Nickel-plated, per dozen	11.40
Fig. 9896 Finished or Nickel-plated, per dozen	15.00
Fig. 9897 Finished or Nickel-plated, per dozen	25.20
Fig. 9898 Finished or Nickel-plated, per dozen	21.00
Fig. 9899 Finished or Nickel-plated, per dozen	29.40

Fuller Work Handles



Fig. 9899A

Brass



Fig. 9899B

Brass



Fig. 9899C

China



Fig. 9899D

China



Fig. 9899E

China



Fig. 9899F

China

Fig. 9899A Finished or Nickel-plated, per dozen	4.80
Fig. 9899B Finished or Nickel-plated, per dozen	4.80
Fig. 9899C Finished or Nickel-plated, per dozen	13.80
Fig. 9899D Finished or Nickel-plated, per dozen	13.80
Fig. 9899E Finished or Nickel-plated, per dozen	13.80
Fig. 9899F Finished or Nickel-plated, per dozen	13.80

Fuller Trimmings



Fig. 9900
Ball Stem



Fig. 9901
Eccentric



Fig. 9902
Extension

Size, inch.....	1/2	5/8	3/4	1
Fig. 9900 Stems with Balls, per dozen.....	3.00	3.60	4.20	9.00
Fig. 9900A Stems without Balls, per dozen.....	2.40	3.00	3.60	7.80
Fig. 9901 Eccentrics, Fin. or Nickel-plated, per dozen.....	3.00	3.60	4.20	9.00

Fig. 9902. Extensions

Finished				Nickel-plated			
Size, inch.....	1/2	5/8	3/4	Size, inches.....	1/2	5/8	3/4
Fig. 9902 1 1/2 ins. long, per dozen.....	6.00	6.60	11.40	Fig. 9902 1 1/2 ins. long, per dozen.....	7.80	8.40	13.20
Fig. 9902 2 ins. long, per dozen.....	7.20	8.40	13.80	Fig. 9902 2 ins. long, per dozen.....	9.00	10.20	15.60
Fig. 9902 2 1/2 ins. long, per dozen.....	8.40	10.20	16.20	Fig. 9902 2 1/2 ins. long, per dozen.....	10.20	12.00	18.00
Fig. 9902 3 ins. long, per dozen.....	9.60	12.00	18.60	Fig. 9902 3 ins long, per dozen.....	11.40	13.80	20.40

Basin Cock Couplings

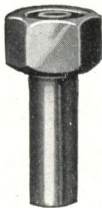


Fig. 9903
Lead Pipe

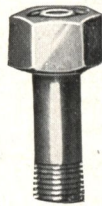


Fig. 9904
1/4-inch Iron Pipe

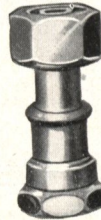


Fig. 9905
Iron Pipe, Female

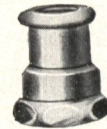


Fig. 9906
Reducer

Rough Brass	Nickel-plated
3.60	4.80
3.60	4.80
6.60	9.00
7.80	10.20
2.40	3.60
3.60	4.80

Fig. 9903 Lead Pipe, per dozen.....	.....
Fig. 9904 Iron Pipe, 1/4-inch Male, per dozen.....	.....
Fig. 9905 Iron Pipe, 3/8-inch Female, per dozen.....	.....
Fig. 9905A Iron Pipe, 1/2-inch Female, per dozen.....	.....
Fig. 9906 Reducer, 1/4 x 3/8-inch Iron Pipe, per dozen.....	.....
Fig. 9906A Reducer, 1/4 x 1/2-inch Iron Pipe, per dozen.....	.....

Bath Cock Couplings

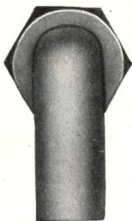


Fig. 9907
Lead Pipe
Rough Nickel-plated,
per pair..... .80

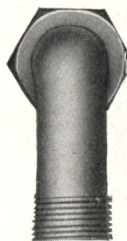


Fig. 9908
Male Iron Pipe
Rough Nickel-plated,
per pair..... .95
Finish N. P., per pair 1.40

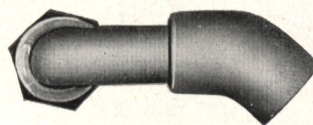


Fig. 9909
45° Elbow
Finish Nickel-plated,
per pair..... 2.25

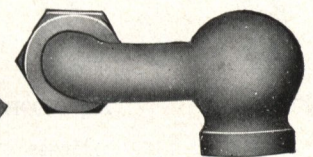


Fig. 9909A
90° Ball Elbow
Finish Nickel-plated,
per pair..... 2.25

Soldering Nipples and Unions

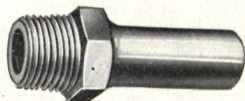


Fig. 9910

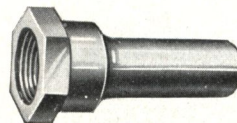
Straight Male
Solder Nipple

Fig. 9911

Straight Female
Solder Nipple

Size, inches.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	4
Fig. 9910 Male Nipple, per doz...	3.60	3.60	3.60	4.20	6.00	8.40	10.80	15.00	21.00	36.00	48.00	84.00
Fig. 9911 Female Nipple, per doz.	3.60	3.60	3.60	4.20	6.00	8.40	10.80	15.00	21.00	36.00	48.00	84.00

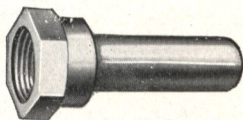


Fig. 9912

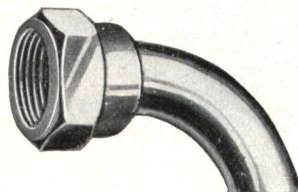
Straight Female
Solder Union

Fig. 9913

Bent Female
Solder Union

Size, inches.....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Fig. 9912 Straight Union, per dozen.....	4.20	4.20	4.80	6.00	7.80	10.20	13.20	15.00	21.00
Fig. 9913 Bent Union, per dozen.....	6.00	6.00	7.20	8.40	9.60	12.00	16.20	22.80	30.00

Basin Trap Screws

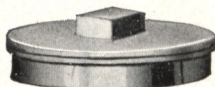


Fig. 9914

Regular Pattern



Fig. 9915

With Countersunk Cap

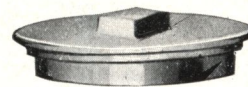


Fig. 9916

With Projecting Flange

Sizes, inches.....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	5	6
Fig. 9914 Finished, per doz.....	1.80	2.40	3.00	3.60	4.20	7.20	12.00	15.00	18.00	21.00	27.00	42.00
Fig. 9914 Nickel-plated, per doz.	4.20	4.80	5.40	6.60	7.20	12.00	15.00	21.00	24.00	27.00	36.00	54.00
Fig. 9915 Finished, per doz.....	1.80	2.40	3.00	3.60	4.20	7.20	10.80	15.00	18.00	21.00	.....	.....
Fig. 9915 Nickel-plated, per doz.	4.20	4.80	5.40	6.60	7.80	12.00	15.00	21.00	24.00	27.00	.....	.....
Fig. 9916 Finished, per doz.....	.....	.....	.....	.....	.....	12.00	15.00	21.00	24.00	27.00	36.00	.....
Fig. 9916 Nickel-plated, per doz.	.....	.....	.....	.....	.....	16.80	21.00	27.00	30.00	36.00	48.00	.....

Lead Flange Union Couplings

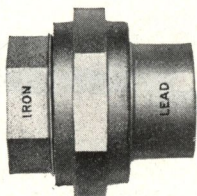


Fig. 9920

Lead to Iron

Size, inches.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Fig. 9920 Rough, per dozen.....	9.00	10.20	15.60	18.00	24.00	45.60	60.00	90.00
Fig. 9921 Rough, per dozen.....	18.00	21.00	30.00	35.40	46.80	90.00	111.00	171.00

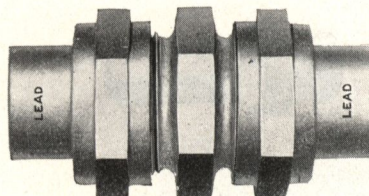


Fig. 9921

Lead to Lead

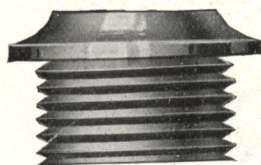


Fig. 9922

Hose Bibb Ends

Fig. 9922

Size, inches.....	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Finished, per dozen.....	3.00	3.60	4.20	6.00	9.00	12.00	18.00

Brass Safe Waste Valve

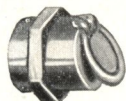


Fig. 9923

Brass Sewer Valve

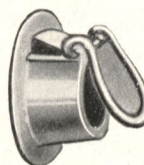


Fig. 9924

Size, inches.....					$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Fig. 9923 Rough, per dozen.....					12.00	15.00	18.00	24.00	36.00
Size, inches.....	2	$2\frac{1}{2}$	3	4	5	6	8	9	10
Fig. 9924 Rough, per dozen.....	24.60	30.60	36.60	42.50	60.60	93.00	246.00	312.00	372.00

Plain and Valve Couplings

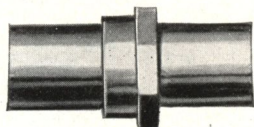


Fig. 9925

Plain Coupling

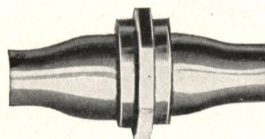


Fig. 9926

Valve Coupling

Size, inches.....	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Fig. 9925 Plain Face, per dozen.....	4.20	4.80	6.00	7.20	8.40	12.00	15.00	21.00	30.00
Fig. 9925 Ground Face, per dozen.....	6.00	6.60	7.80	9.00	10.80	14.40	18.00	25.20	36.00
Fig. 9926 Ground Face, per dozen.....	....	12.00	14.40	*15.00	19.20	24.00	36.00	48.00	72.00

Figs. 9925-6 Ground Face, per dozen, both ends Iron Pipe, same price.

* $\frac{5}{8}$ -inch side made for Lead Pipe only.

Nickel-plated Tube Fittings

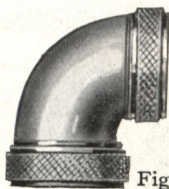


Fig. 9930

Nickel-plated Double Slip
90° Elbows

Size, inches...	1¼	1⅜	1½	2
Each.....	.72	.88	.93	1.86

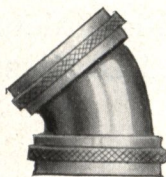


Fig. 9931

Nickel-plated Double Slip
45° Elbows

Size, inches...	1¼	1⅜	1½	2
Each.....	.72	.88	.93	1.86

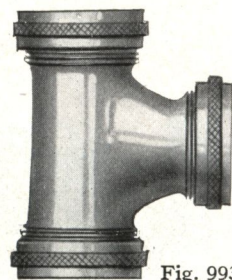


Fig. 9932

Nickel-plated Tees Slip
All Ends

Size, inches	1¼	1⅜	1½	2
Each.....	1.74	2.10	2.28	3.50

Brass Vent Tees

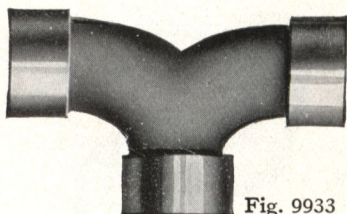


Fig. 9933

All I. P.

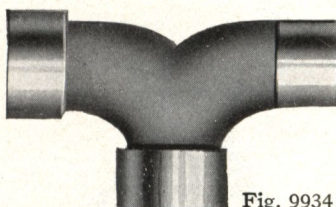


Fig. 9934

2 I. P.—1 L. P.

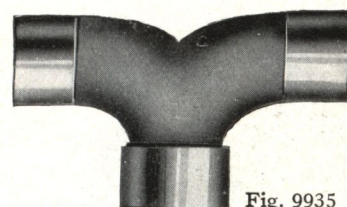


Fig. 9935

2 L. P.—1 I. P.

Fig. 9933	1½-inch Brass Tee, tapped for iron pipe, each.....	1.00
Fig. 9934	1½-inch Brass Tee, tapped for iron and lead pipe, each.....	1.00
Fig. 9935	1½-inch Brass Tee, tapped for iron and lead pipe, each.....	1.00

Nickel-plated Chain Stays

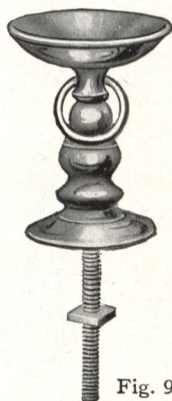


Fig. 9936

No. 2 Chain Stay

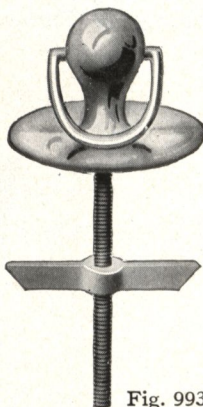


Fig. 9937

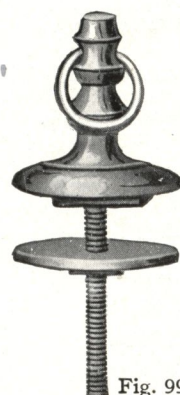
Nason Special Heavy Cast Brass
Chain Stay

Fig. 9938

No. 3 Chain Stay

Per dozen.....	10.00	Per dozen.....	8.00	Per dozen.....	6.00
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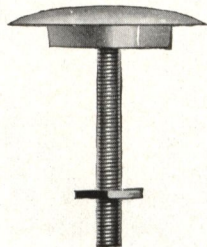


Fig. 9939

Cock Hole Cover

Cock Hole Covers

Fig. 9939

1½-inch Diameter with Washer
For Lavatories and Sinks

Nickel-plated, per dozen.....	6.00
-------------------------------	------

Fig. 9939A

1¾-inch Diameter with Heavy Brass Washer
For Bath Tubs

Nickel-plated, per dozen.....	9.00
-------------------------------	------

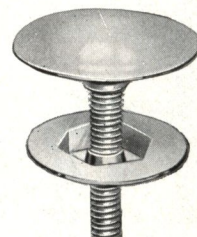


Fig. 9939A

Cock Hole Cover

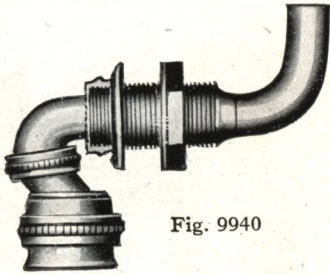


Fig. 9940

Bent Inlet Connection Nut
Clamp, Slip Joint

Nickel-plated, per dozen..... 42.00

Urinal Inlets
and Outlets

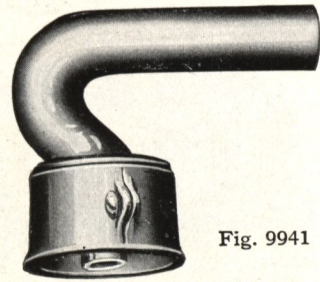


Fig. 9941

Bent Inlet Connection Side Lug and
Screws, Slip Joint

Nickel-plated, per dozen..... 36.00

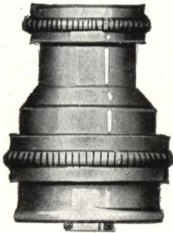


Fig. 9942

Inlet Connection, Nut Clamp,
Slip Joint. For 1-inch O. D.
Tubing or Threaded for iron
pipe.

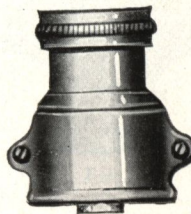


Fig. 9943

Inlet Connection, Side Lug
and Screws, Slip Joint for 1-inch
O. D. Tubing or Threaded for
iron pipe.

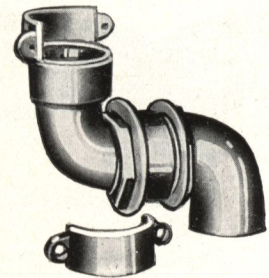


Fig. 9944

Outlet Connection, with Split
Collar and Coupling for lead
pipe.

Fig. 9942 Nickel-plated Urinal Inlet, per dozen.....	30.00
Fig. 9943 Nickel-plated Urinal Inlet, per dozen.....	27.00
Fig. 9944 Nickel-plated Urinal Outlet, per dozen.....	64.50

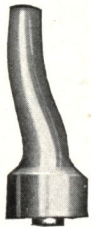


Fig. 9945

Lead Pipe Inlet

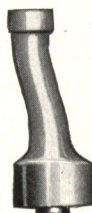


Fig. 9946

Iron Pipe Male Inlet

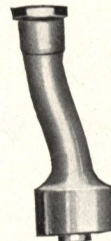


Fig. 9947

Iron Pipe Female Inlet

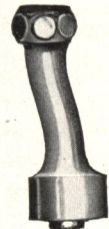


Fig. 9948

Slip Joint Inlet

Fig. 9945 Nickel-plated Inlet for Urinal with Earthenware Horn, Lead Pipe, each.....	.80
Fig. 9946 Nickel-plated Inlet for Urinal with Earthenware Horn, Iron Pipe, Male, each.....	.90
Fig. 9947 Nickel-plated Inlet for Urinal with Earthenware Horn, Iron Pipe, Female, each.....	.90
Fig. 9948 Nickel-plated Inlet for Urinal with Earthenware Horn, Slip Joint, each.....	.90

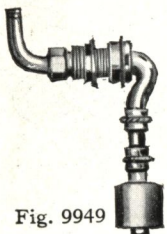


Fig. 9949

Fig. 9949

Nickel-plated Bent Urinal Inlet

Lead or Iron Pipe, each..... 2.60

Fig. 9949A

Nickel-plated Bent Urinal Outlet

Lead Pipe, each..... 2.70

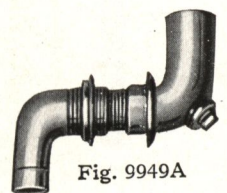


Fig. 9949A

Brass Urinal Traps and Spreader

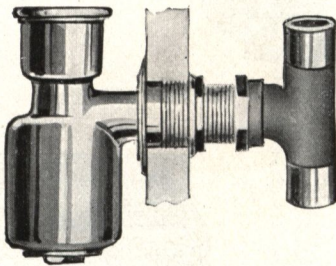


Fig. 9950

Brass Urinal Trap with Adjustable Flange, Vent and Waste, for Urinals with Earthenware Horn.

Polished Brass or Nickel-plated, each..... 4.40
If with Vent and Waste bushed for I. P., add..... 1.00

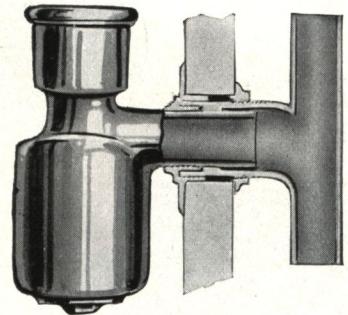


Fig. 9951

Brass Urinal Trap with Slip Joint, Vent and Waste, for Urinals with Earthenware Horn.

Polished Brass or Nickel-plated, each..... 6.00
If with Vent and Waste bushed for I. P., add..... 1.00

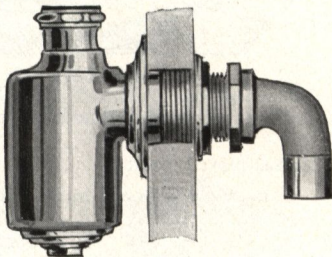


Fig. 9952

Brass Urinal Trap with Adjustable Flange and Bent Tail Piece, for Urinals with Brass Spuds.

Polished Brass or Nickel-plated, each..... 6.40
If with Vent like Fig. 9950, each..... 6.80

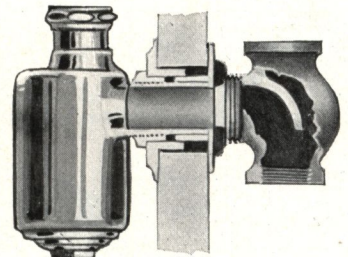


Fig. 9953

Brass Urinal Trap with Slip Joint, with Sanitary Vent and Waste Tee, 1 1/2-inch Iron Pipe Female, for Urinals with Brass Spud.

Polished Brass or Nickel-plated, each..... 7.40
If with Vent like Fig. 9950, each..... 7.00

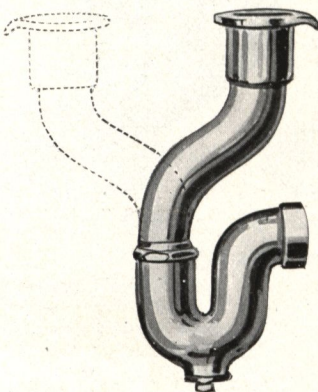


Fig. 9954

Fig. 9954

Cast Brass N. Y. R. Single Adjustable Offset 1/2 S Urinal Trap, with Female Iron Pipe Outlet, for Urinals with Earthenware Horn.

Size, inches.....	1 1/4	1 1/2	2
Polished Brass or Nickel-plated.....	3.50	4.00	5.50

Fig. 9955

Nickel-plated Brass Urinal Inlet and Spreader

1/2-inch I. P. Slip Inlet, each.....	2.50
3/4-inch O. D. Slip Inlet, each.....	2.50
Add for Bushing to slip 1, 1 1/8 and 1 1/4-inch O. D., each	.50

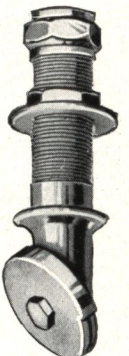


Fig. 9955

Stall Trimmings

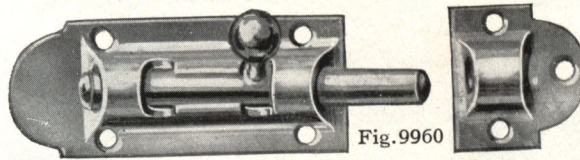


Fig. 9960 Nickel-plated Sliding Door Bolt, each.65

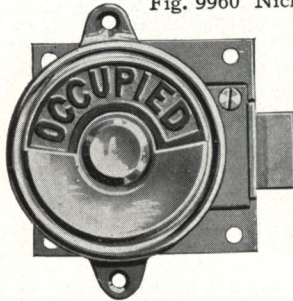


Fig. 9961. Outside View

Fig. 9961

Brass Stall Door
Indicating Bolt

Nickel-plated, each. 2.40

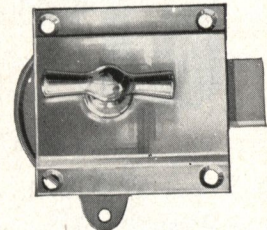


Fig. 9961A
Inside View

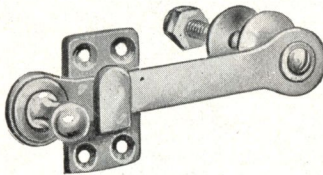


Fig. 9962

Door Latch

Nickel-plated, each. 1.90

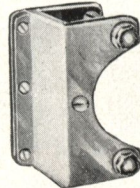


Fig. 9963

Door Strikes
Adjustable

Nickel-plated, each 1.75
Give thickness of doors
and stiles.

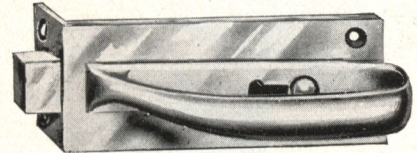


Fig. 9964

Mortise Bolt

Nickel-plated, each. 2.50
State if door opens in or out. Used with
Fig. 9963 Strike.

Brass Door Strikes and Bolt Catches with Rubber Bumpers

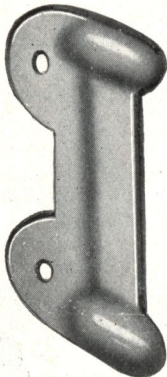


Fig. 9965

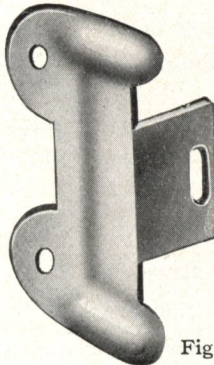


Fig. 9966

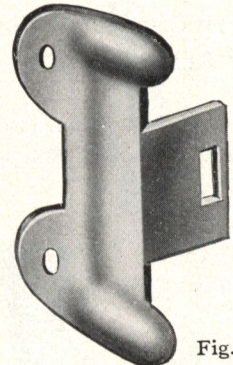


Fig. 9967

Fig. 9965 Nickel-plated, each.70

Figs. 9966-7 Nickel-plated, each.80

Fig. 9966 is adapted for use with Bolt Fig. 9960.
Fig. 9967 is adapted for use with Bolt Fig. 9961.

Figs. 9966-9967 are for doors swinging inside of stalls, but can be arranged for doors swinging outside.
In ordering state thickness of wooden doors and marble stiles.

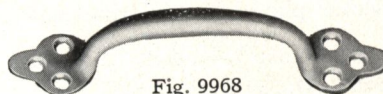


Fig. 9968

Fig. 9968 Nickel-plated Door Pull (height, 5 3/4 inches), each.90

Closet and Urinal Stall Standards

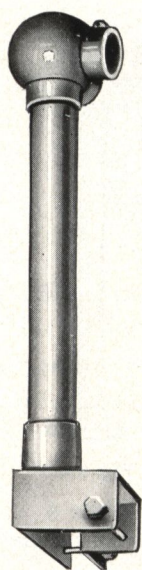


Fig. 9970. Corner

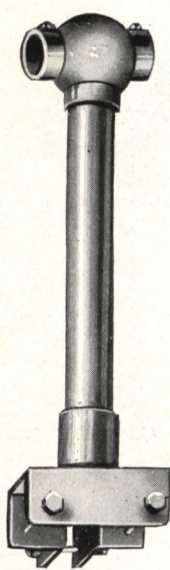


Fig. 9971. Partition

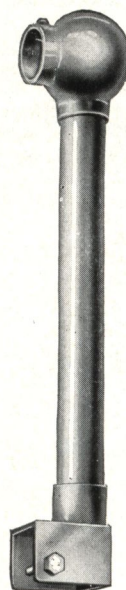
Top
Standards

Fig. 9972. End

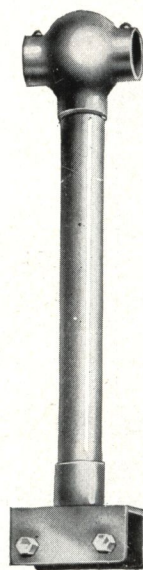


Fig. 9973. Center

	Fig. 9970 Corner	Fig. 9971 Partition	Fig. 9972 End	Fig. 9973 Center
Polished Brass, each.....	2.70	3.00	2.50	2.70
Nickel-plated, each.....	2.70	3.00	2.50	2.70
Galvanized Iron, each.....	1.00	1.00	1.00	1.00

Prices include Bolts..

Note: All Top Standards are furnished regularly for 1¼-inch outside diameter rail, 12 inches high from top of Stall to center of Rail; Channels for marble 1⅜ inches thick and under. State thickness of marble when ordering.

Bottom Standards

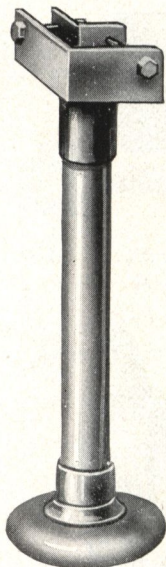


Fig. 9974. Corner

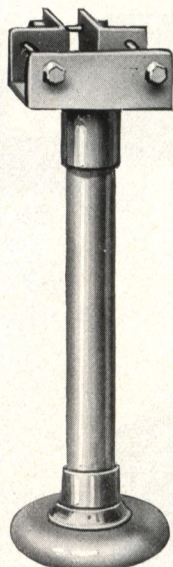


Fig. 9975. Partition

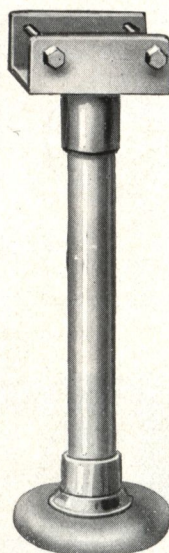


Fig. 9976. Center

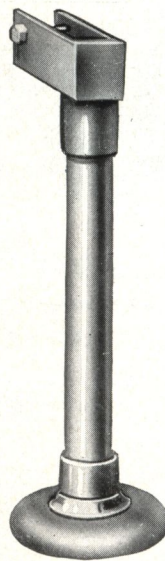


Fig. 9977. End

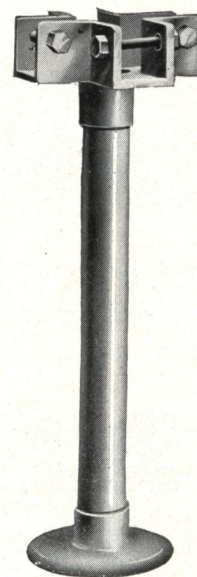


Fig. 9978. Cross

	Fig. 9974 Corner	Fig. 9975 Partition	Fig. 9976 Center	Fig. 9977 End	Fig. 9978 Cross
Polished Brass, each.....	2.70	3.00	2.70	2.50	3.30
Nickel-plated, each.....	2.70	3.00	2.70	2.50	3.30
Galvanized Iron, each.....	1.00	1.00	1.00	1.00	1.25

Prices include Bolts..

Note: All Bottom Standards are furnished regularly with Bottom Flanges 4 inches in diameter, 12 inches high from floor to bottom of Partition. Channels for marble 1⅜ inches thick and under. State height of Standard and thickness of marble when ordering.

Stall Standards for Wood

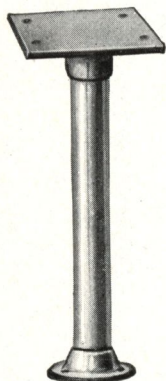


Fig. 9980

Style 1

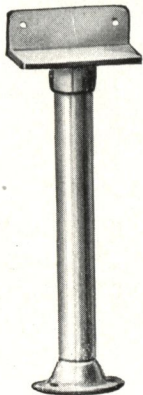


Fig. 9981

Style 2

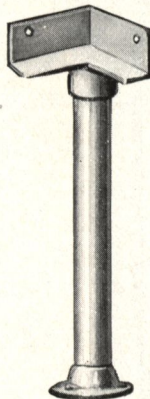


Fig. 9982

Style 3

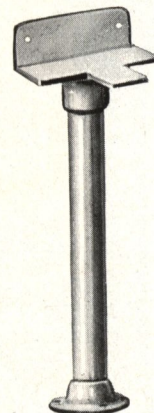


Fig. 9983

Style 4

	Fig. 9980 Style 1	Fig. 9981 Style 2	Fig. 9982 Style 3	Fig. 9983 Style 4
Polished Brass, each.....	2.00	2.00	2.35	2.75
Nickel-plated, each.....	2.00	2.00	2.35	2.75
Galvanized Iron, each.....	1.00	1.00	1.00	1.25

Prices include bolts or screws.

Note: When ordering state thickness of wood and height of standard.

Partition Brackets

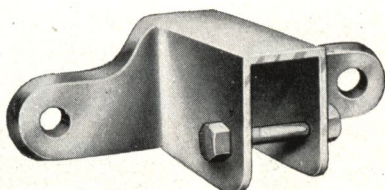


Fig. 9984

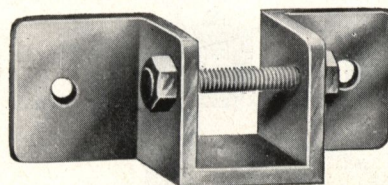


Fig. 9985

Nickel-plated, each..... .70

Nickel-plated, each..... 1.00

Price includes one bolt.

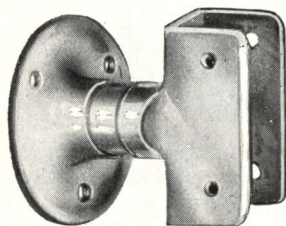


Fig. 9986

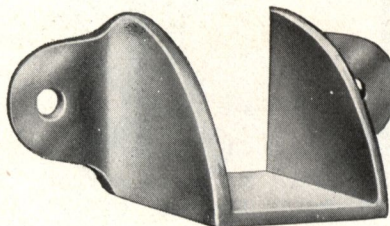


Fig. 9987



Fig. 9988

Fig. 9986 Nickel-plated (2 Bolts included), each.....	1.60
Fig. 9987 Nickel-plated (2 Bolts included), each.....	1.20
Fig. 9988 Nickel-plated, Flange Threaded, 1¼-inch O. D. Tubing, each.....	.50
Fig. 9988 Nickel-plated, Flange Threaded, 1½-inch O. D. Tubing, each.....	.80

State thickness of marble when ordering.

Stall Trimmings

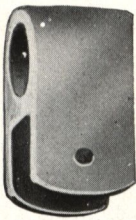


Fig. 9990

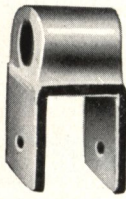


Fig. 9991

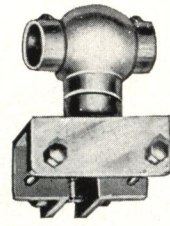


Fig. 9992

Nickel-plated Brass Railing Holders. For $1\frac{1}{4}$ -inch O. D. Tubing and $1\frac{1}{4}$ -inch Marble.

Figs. 9990-1 Nickel-plated, each..... 1.10

Price includes one bolt.

Short Pattern Top Standards

These Standards are $2\frac{1}{2}$ inches from top of marble to center of top rail and can be furnished with any style Channels or Globe Fittings.

Prices on application.

Angles

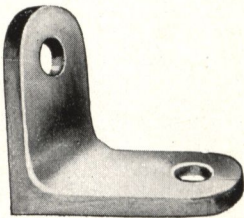


Fig. 9993

Size, $1\frac{7}{8} \times 1\frac{7}{8} \times 1$ inches.

Nickel-plated, each..... .60
Galvanized Iron, each..... .12

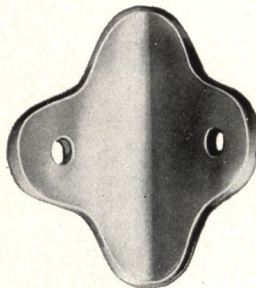


Fig. 9994

Size, $2\frac{1}{8} \times 2\frac{1}{8} \times 3\frac{1}{2}$ inches.

Nickel-plated, each..... .80

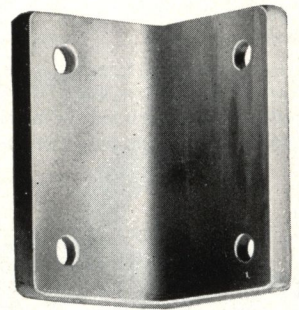


Fig. 9995

Size, $2 \times 2 \times 3$ inches.

Nickel-plated, each..... .80
Galvanized Iron, each..... .18



Fig. 9996

Brass Stall Bolt
Nickel-plated Heads

$2\frac{1}{2}$ inches long, per gross..... 18.00

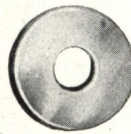


Fig. 9997

Slab Washers
Nickel-plated

Per gross..... 3.00

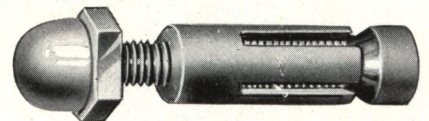


Fig. 9998

Brass Expansion Bolt with Brass
Shield and Nickel-plated Head

Per 100..... 16.25



Fig. 9999

Threaded Brass Rod, cut in 1 or 2-foot lengths, per foot..... .30

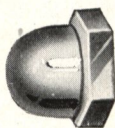


Fig. 9999A

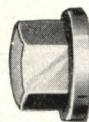


Fig. 9999B

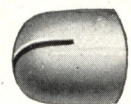


Fig. 9999C

Brass Bolt Heads—Threaded for $\frac{1}{4}$ -inch Rod

Fig. 9999A Nickel-plated Brass Bolt Heads, per 100..... 3.35
Fig. 9999B Nickel-plated Brass Bolt Heads, per 100..... 4.00
Fig. 9999C Nickel-plated Brass Bolt Heads, per 100..... 6.00

Brass Closet Stall Hinges With Steel Bearings

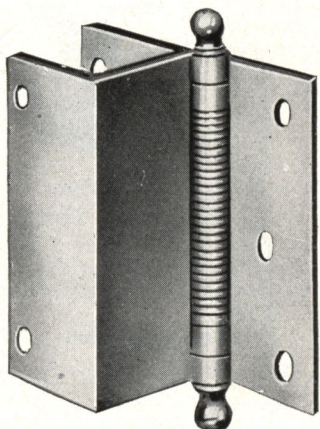


Fig. 10000

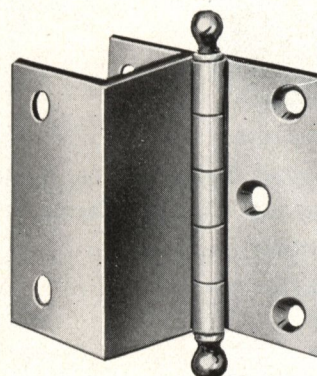


Fig. 10001

With Spring

Without Spring

Fig. 10000 Nickel-plated, with Bolts and Screws, per pair.....	5.00
Fig. 10001 Nickel-plated, with Bolts and Screws, per pair.....	4.00

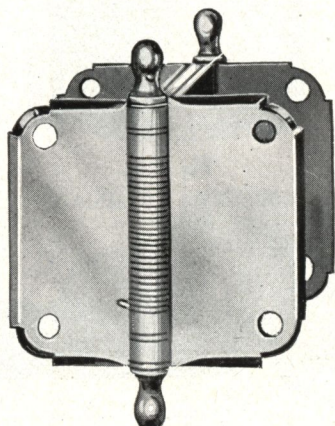


Fig. 10002

Double Acting

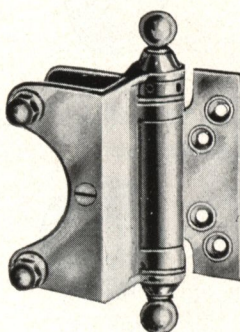


Fig. 10003

Single Acting
Hinge Adjustable

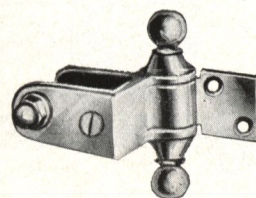


Fig. 10004

Blank

Fig. 10002 Nickel-plated, per pair.....	9.00
Fig. 10003 Nickel-plated, per pair.....	5.75
Fig. 10003-4 Nickel-plated Hinge and Blank, per set.....	4.75

Note: Fig. 10002 Double Acting Hinges are intended for lattice doors of light weight. For solid doors we make a heavier hinge for which add 3.50 per pair to list.

In ordering Hinges always give thickness of marble stiles and doors.

Brass Top Rail



Fig. 10005

Nickel-plated, 1¼-inch O. D. Tubing, per foot.....	2.00
--	------

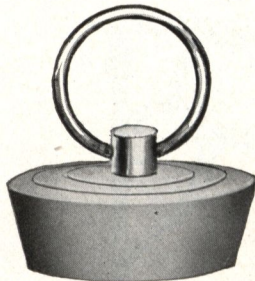


Fig. 10010

Fig. 10010

Rubber Stoppers

Size, inches.....	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Per dozen.....	1.44	1.44	1.44	1.56	1.80	2.00	2.28	3.24	4.20	5.40



Fig. 10011

Brass S Hooks
Finished or
Nickel-plated

Small Size, per dozen..	1.20
Large Size, per dozen..	1.50

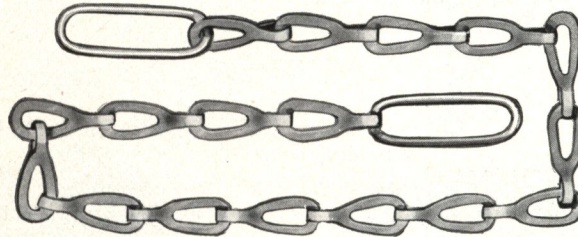


Fig. 10012

Brass Chain with Split Links
Finished or Nickel-plated

For Basins, per dozen.....	2.50
For Bath Tub, per dozen.....	3.00
For Wash Tray, per dozen.....	3.00

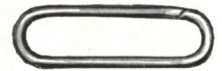


Fig. 10013

Brass Split Links
Finished or
Nickel-plated

Small Size, per dozen..	.60
Large Size, per dozen..	.75

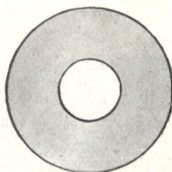


Fig. 10014

Nickel-plated Brass Round
Washers

Per 100.....	1.50
--------------	------

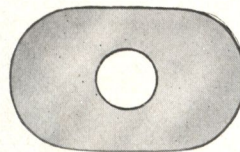


Fig. 10015

Nickel-plated Brass Oval
Washer

Per 100.....	1.50
--------------	------

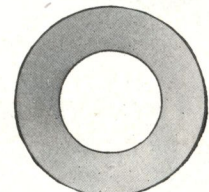


Fig. 10016

Zinc Basin Cock
Washers

Per 100.....	3.00
--------------	------

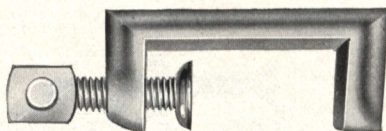


Fig. 10017

Brass Hopper Clamp

Each.....	.50
-----------	-----

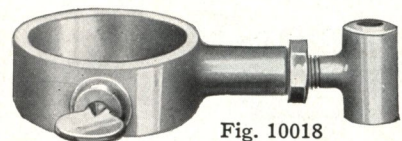


Fig. 10018

Brass Adjustable Guide Holder
For Douglas Type Flush Valves

Each.....	1.00
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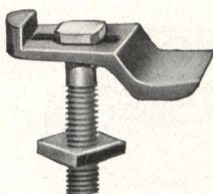


Fig. 10019

Brass Basin
Clamp

Per Dozen, Rough.....	1.80
-----------------------	------

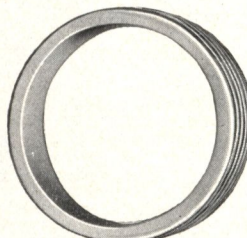


Fig. 10019A

Threaded Brass Trap Collar

$1\frac{1}{4}$ Tube, $1\frac{1}{4}$ Iron Pipe, per doz.	4.00
$1\frac{1}{4}$ Tube, $1\frac{1}{2}$ Iron Pipe, per doz.	4.00
$1\frac{1}{2}$ Tube, $1\frac{1}{2}$ Iron Pipe, per doz.	5.00

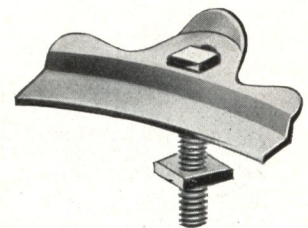


Fig. 10019B

Brass Basin
Clamp

Rough, per dozen.....	2.40
-----------------------	------

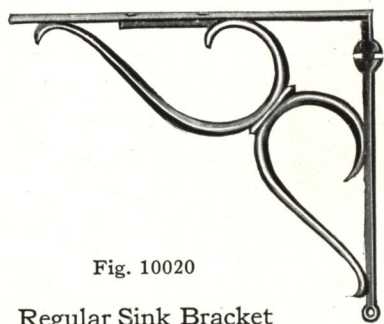
Sink
Fittings

Fig. 10020

Regular Sink Bracket

Per Pair

	Plain	Galv'd
No. 1 For Sinks up to 14 inches wide...	1.00	2.00
No. 2 For Sinks up to 18 inches wide...	1.00	2.00
No. 3 For Sinks up to 24 inches wide...	1.40	2.50

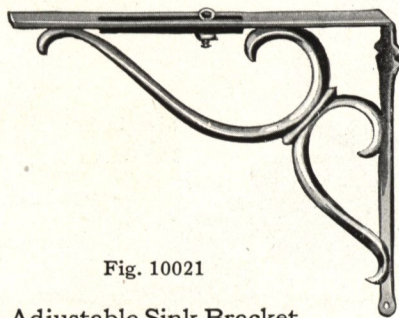


Fig. 10021

Adjustable Sink Bracket

Per Pair

	Plain	Galv'd
No. 1 For Sinks up to 14 inches wide...	1.20	2.00
No. 2 For Sinks up to 18 inches wide...	1.50	2.50
No. 3 For Sinks up to 24 inches wide...	2.50	4.00

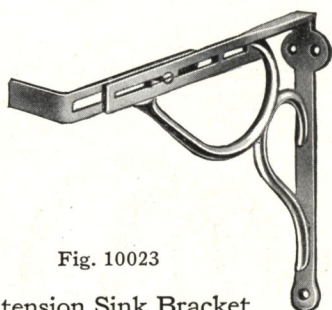


Fig. 10023

Extension Sink Bracket

An excellent Bracket for enameled sinks. Does not require drilling of sink rims.

Per Pair

	Plain	Galv'd
No. 10 For Sinks up to 22 inches wide...	3.00	6.00



Fig. 10024

Sink Leg

	Plain	Galv'd
Each.....	.50	1.00



Fig. 10025

Sink Coupling for Lead Pipe

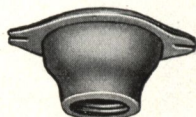


Fig. 10026

Tapped Sink Coupling
For Iron Pipe

	Size, inches.....	1 1/4	1 1/2	2
Plain, each.....	Plain, each.....	.15	.20	.25
Galvanized, each.....	Galvanized, each.....	.20	.25	.30

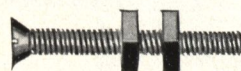


Fig. 10027

Sink Bolt and Nut

Iron, per dozen.....	.40
Brass, per dozen.....	.60

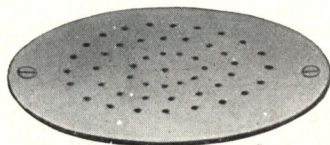


Fig. 10028

Open Sink Strainer

Plain Iron, per dozen.....	2.00
Galvanized Iron, per dozen.....	4.00
Nickel-plated Brass, per dozen.....	4.00

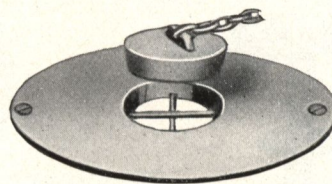


Fig. 10029

Plug Sink Strainer with Stopper

Plain Iron, per dozen.....	3.00
Galvanized Iron, per dozen.....	6.00
Nickel-plated Brass, per dozen.....	9.00

Fuller Balls and Washers

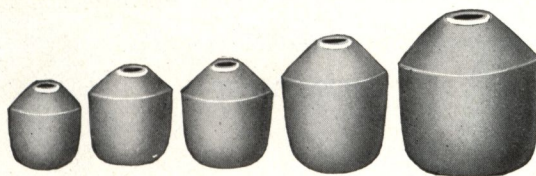


Fig. 10030

Fuller Balls

Size, inch.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Hot and Cold Water, per 100.....	3.50	5.00	5.00	8.25	12.00



Fig. 10031

Bibb Washers For Hot and Cold Water

Size, inch.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Per 100.....	1.50	1.50	1.50	1.50	2.00

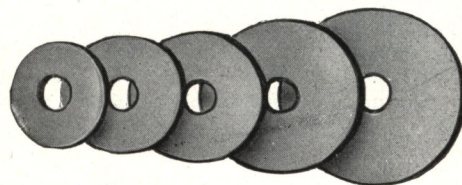


Fig. 10032

Fibre Bibb Washers For Hot and Cold Water

Size, inch.....	Basin	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1
Per 100.....	.75	.75	.75	.75	.75	1.25

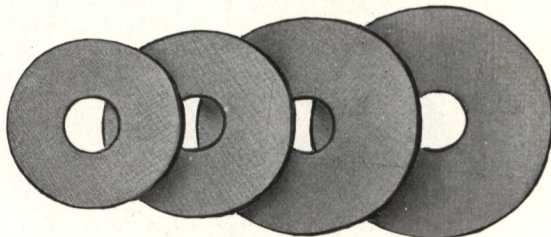


Fig. 10033

Rubber Top Bibb Washers Cloth Outside and Cloth Insertion

Size, inch.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$
Per 100.....	1.00	1.00	1.00	1.50

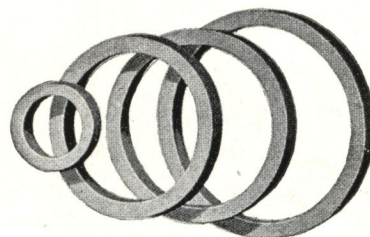


Fig. 10034

Rubber Slip Joint Washers

Size, inches.....	$\frac{3}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$	2
Per 100.....	3.20	4.00	4.40	4.80	8.00

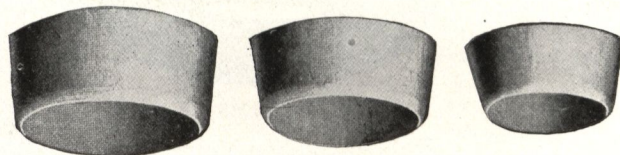


Fig. 10035

Unique Bath and Basin Waste Washers

For Bath Waste, each.....	.25
For Basin Waste, each.....	.20



Fig. 10036

Mack Basin Washer

Each.....	.30
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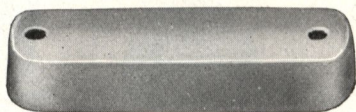


Fig. 10037

Rubber Seat Bumper With Brass Tacks

$2\frac{1}{4}$ inches, per dozen.....	1.00
---------------------------------------	------



Fig. 10038

Rubber Seat Bumper With Round Head Brass Screws

$2\frac{1}{2}$ inches, per dozen.....	1.80
---------------------------------------	------

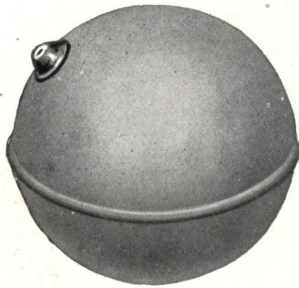


Fig. 10040

Copper Float

Size, inches	4	5	6	7	8	10	12
Each.....	.90	1.00	1.80	2.50	3.20	6.00	7.50

Larger sizes up to 20-inch can be furnished. Prices on application.

Closet Trimmings

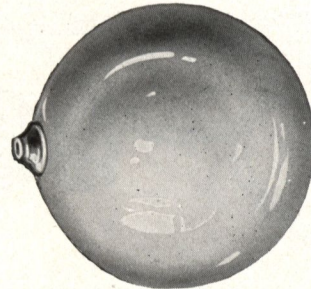


Fig. 10041

Glass Float

Size, inches.....	5
Each.....	1.00

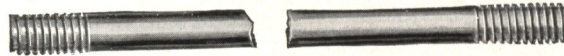


Fig. 10042

Brass Rods for Copper and Glass Floats

Fig. 10042 Rods 10 inches long, each.....	.25
---	-----



Fig. 10043

Rubber Flush Ball, with Spud for High or Low Tanks

2-inch for High Tank, each.....	.50
2 1/4-inch for Low Tank, each.....	.50
2 3/4-inch for Low Tank, each.....	.50
Stems and Rods, extra per set.....	.10

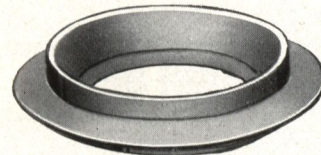


Fig. 10044

Rubber Syphon Valve Washer

Size, inches.....	1 1/4	1 1/2
Per dozen.....	2.25	3.00

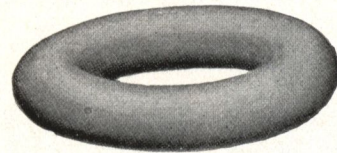


Fig. 10045

Rubber Syphon Valve Ring

Size, inches.....	1 1/4	1 1/2
Per dozen.....	2.25	3.00

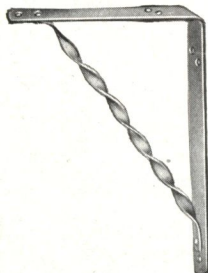


Fig. 10046

Steel Tank Brackets

Nickel-plated, per pair.....	1.00
Japanned, per pair.....	.65

Rubber Seat Bumpers



Fig. 10047
Tack

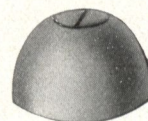


Fig. 10048
Plain

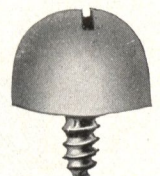


Fig. 10049
Screw

Fig. 10047 Tack Bumper, per dozen.....	.60
Fig. 10048 Plain Bumper, per dozen.....	.60
Fig. 10049 Screw Bumper, per dozen.....	.75

Brass Lavatory and Sink Traps

Cast Brass New York Regulation Half S Traps with Outlet Threaded for Iron Pipe
No Vent

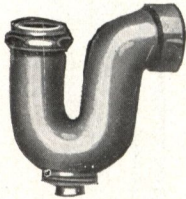


Fig. 10050

Half S Trap
Body

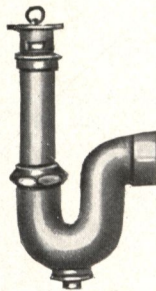


Fig. 10051

Half S Trap
Straight Inlet and
and P. O. Plug

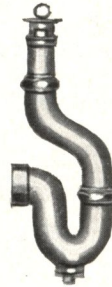


Fig. 10052

Half S Trap
Single Offset and
P. O. Plug

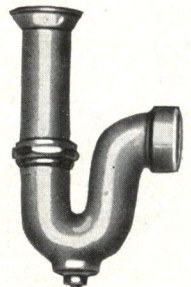


Fig. 10053

Half S Trap
Straight Inlet and
Sink Coupling

Size, inches.....	1¼	1½	2
Fig. 10050 Polished Brass or Nickel-plated, each.....	1.60	2.00	4.00
Fig. 10051 Polished Brass or Nickel-plated, each.....	1.90	2.30	4.50
Fig. 10052 Polished Brass or Nickel-plated, each.....	2.50	3.00	7.00
Fig. 10053 Polished Brass or Nickel-plated, each.....	1.90	2.30	4.50

Fig. 10054

Cast Brass New York Regulation Half S Double Adjustable Offset Trap. No Vent. With P. O. Plug and Male Iron Pipe Size Thread on Outlet.

Size, inches.....	1¼	1½
Nickel-plated, each.....	2.50	3.00

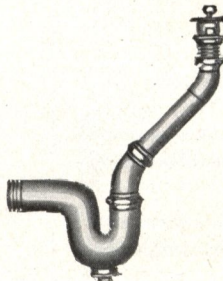


Fig. 10054

Fig. 10055

Cast Brass New York Regulation Half S Single Adjustable Offset Trap. No Vent. With Strainer for Porcelain Sink, and Female Iron Pipe Size Thread on Outlet.

Size, inches.....	1½	2
Polished Brass or Nickel-plated, each.....	7.00	9.00

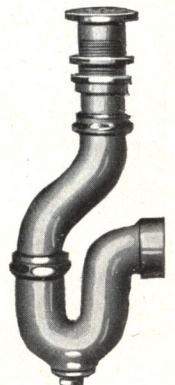


Fig. 10055

Fig. 10056-7

Cast Brass New York Regulation Full S Traps with Outlet Threaded for Iron Pipe. Vented and Not Vented.

Size, inches.....	1¼	1½	2
Fig. 10056 Nickel-plated, no Vent, each...	3.50	5.50	11.00
Fig. 10057 Nickel-plated, with Vent, each.	5.50	7.50	13.00

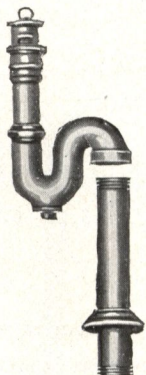


Fig. 10056

Full S Plain
with P. O. Plug

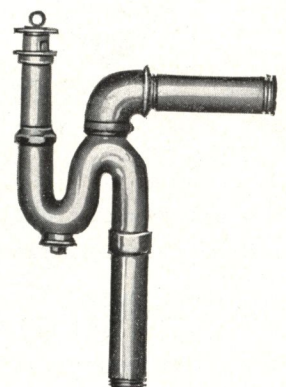


Fig. 10057

Full S Vented
with P. O. Plug

Brass Lavatory Traps

Light Pattern

Regular Cast Brass Lavatory Traps

Adjustable Swivel Pattern with Cleanout

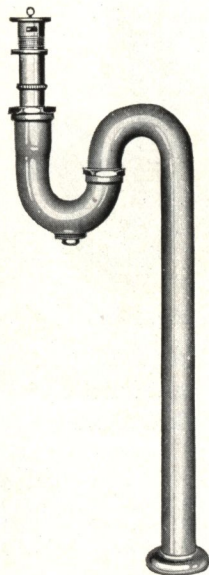
Fig. 10060
Full S Plain

Fig. 10060

Full S Plain

Size, inches.....	1¼	1½
Nickel-plated, each.....	5.00	5.50
If less P. O. Plug, deduct .30		

Fig. 10061

Full S Vented

Size, inches.....	1¼	1½
Nickel-plated, each.....	6.50	7.00
If less P. O. Plug, deduct .30		

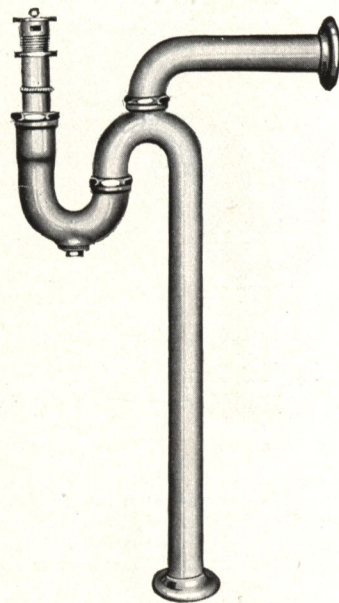
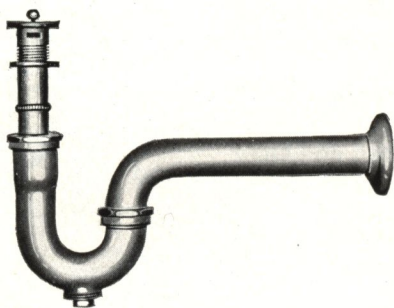
Fig. 10061
Full S Vented

Fig. 10062

Half S Plain

Size, inches.....	1¼	1½
Nickel-plated, each.....	4.00	4.50
If less P. O. Plug, deduct .30		

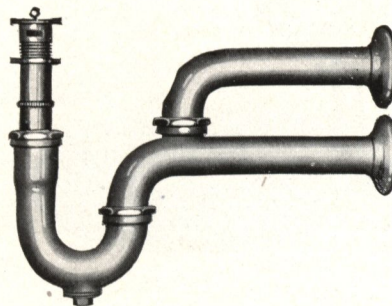


Fig. 10063

Half S Vented

Size, inches.....	1¼	1½
Nickel-plated, each.....	5.50	6.00
If less P. O. Plug, deduct .30		

Note: The swivel joint in body of these Traps gives them a swivel adjustment, allowing the waste to be swung at any angle, permitting them to be used on any style of lavatory or sink. They are especially advantageous where waste openings are very close to the wall.

Sink Coupling Fig. 10124 furnished instead of P. O. Plug on any of the above Traps at same price.

Brass Lavatory Traps

"Securitas" Anti-Syphon Traps
With Detachable Front Cleanout

Fig. 10070

With Waste to Floor

Size, inches.....	1¼	1½	2
Nickel-plated, each.....	6.50	8.00	12.00
*Government Type, each.....	.....	11.00	15.00

Fig. 10071

With Waste to Wall

Size, inches.....	1¼	1½	2
Nickel-plated, each.....	6.50	8.00	12.00
*Government Type.....	.....	10.00	15.00
If less P. O. Plug, deduct .30			

Furnished with 1¼, 1⅜, 1½ or 2-inch O. D. Slip Inlet as desired.

*These Traps comply with the specifications of the U. S. Treasury, War and Navy Departments, issued under date of June, 1910.



Fig. 10070



Fig. 10071

Monarch Anti-Syphon and Resealing Traps

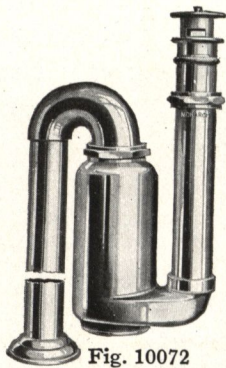


Fig. 10072

With Waste to Floor

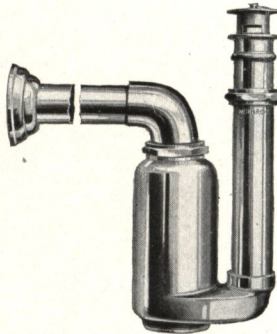


Fig. 10073

With Waste to Wall

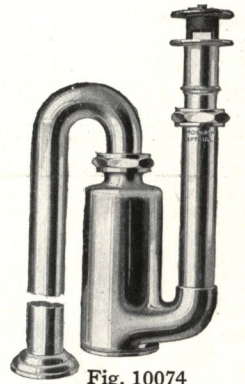


Fig. 10074

Special Light Weight
with Waste to Floor

	Fig. 10072		Fig. 10073		Fig. 10074	
Size, inches.....	1¼	1½	1¼	1½	1¼	1½
Nickel-plated.....	7.00	9.00	6.50	8.50	5.00	6.00
Rough Brass.....	5.50	7.50	5.00	7.00	4.75	5.75
To Offset Outlet Vertical with Inlet, add.....	.50	.50	.....	.....	.50	.50
If less P. O. Plug, deduct.....	.30	.30	.30	.30	.30	.30

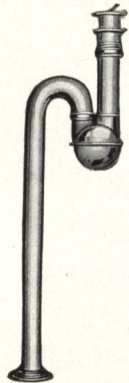


Fig. 10075

Full S

Femco Anti-Syphon Traps

Fig. 10075

Full S

Size, inches.....	1¼	1½
Nickel-plated.....	1.50	1.85
If less P. O. Plug, deduct .30		

Fig. 10076

Half S

Size, inches.....	1¼	1½
Nickel-plated.....	1.30	1.60
If less P. O. Plug, deduct .30		

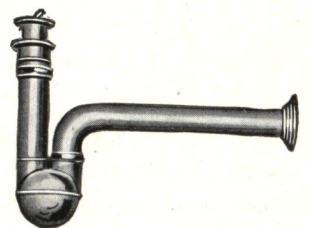


Fig. 10076

Half S

Brass Lavatory Traps

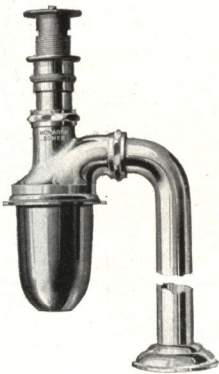


Fig. 10080
S Trap

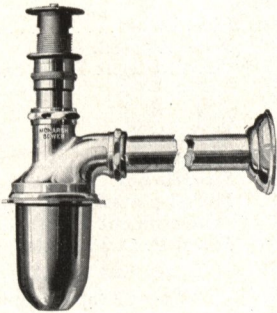


Fig. 10081
Half S Trap

Figs. 10080-1

Bowers' Nickel-plated
Brass
Improved Design
Non-Syphoning Traps
With P. O. Plug

Size, inches.....	1¼	1½
Fig. 10080 Nickel-plated, S and Half S, no Vent.....	4.40	5.85
Fig. 10081 Nickel-plated S and Half S, Vented.....	5.40	7.50
If less P. O. Plug, deduct.....	.30	.30

Flask Pattern Cast Brass Traps
with Cleanout



Fig. 10082
Waste to Floor
Plain



Fig. 10083
Waste to Wall
Plain

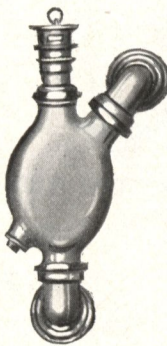


Fig. 10084
Waste to Wall
Vented

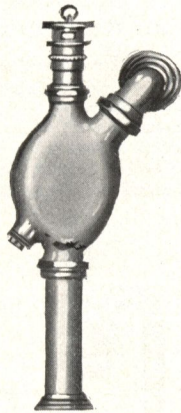


Fig. 10085
Waste to Floor
Vented

Size, inches.....	1½	Size, inches.....	1½	Size, inches.....	1½	Size, inches.....	1½
Nickel-plated.....	4.25	Nickel-plated.....	4.50	Nickel-plated.....	5.50	Nickel-plated.....	5.75

If any of these Traps are wanted less P. O. Plug, deduct .30

Brass Traps

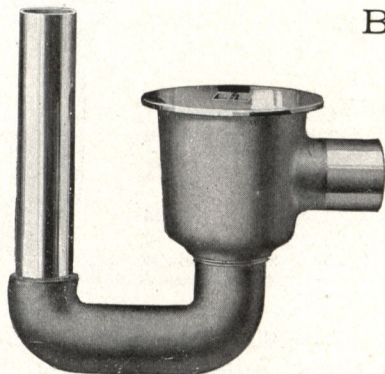


Fig. 10090

Monarch Rough Brass Bath Trap, with Nickel-plated Cover and Inlet Tube, with Adjustable Inlet.

Size, inches.....	1¼	1½
Each.....	4.00	4.50
For Iron Pipe on Outlet, add.....	.20	.20
For Vent, add.....	.10	.10

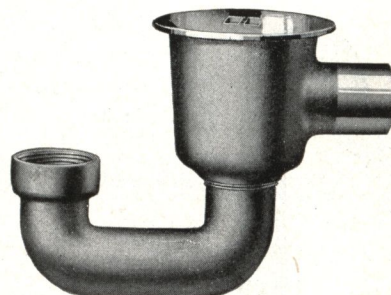


Fig. 10091

Monarch Rough Brass Bath Trap, with Nickel-plated Cover and Adjustable Inlet for iron pipe.

Size, inches.....	1¼	1½
Each.....	3.50	4.00
For Iron Pipe on Outlet, add.....	.20	.20
For Vent, add.....	.10	.10

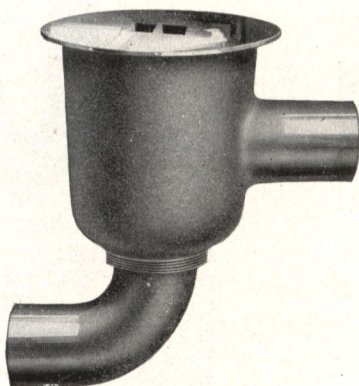


Fig. 10092

Monarch Rough Brass Bath Trap, with Nickel-plated Cover and Adjustable Inlet.

Size, inches.....	1¼	1½
Each.....	2.30	2.50
For Vent, add to list.....	.10	.10

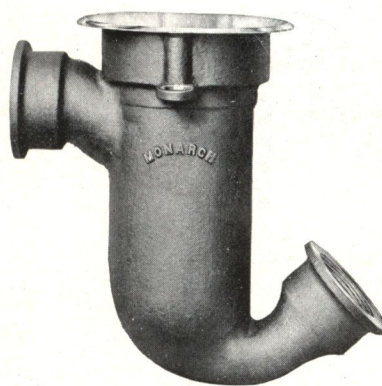


Fig. 10093

Monarch Rough Brass Anti-syphon and Re-sealing Bath Trap with Nickel-plated Adjustable Floor Plate.

Size, inches.....	1¼	1½
Each.....	5.00	7.00

Made for iron or lead connections.

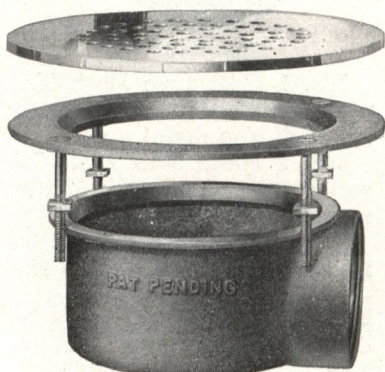


Fig. 10094

Fig. 10094

The Monarch Brass Shower Bath Trap, with Nickel-plated Cast Strainer

This Trap has a 4-inch Cast Brass Body, with a 2-inch Threaded Outlet, the Trap being formed from the outlet by the plumber. A piece of 4-inch lead pipe is used between the ring and the bottom, being wiped to the bottom piece and extended through the floor when roughing. In finishing, the brass ring is bolted to the marble. The countersinking of the marble permits the strainer to set level with the surface.

Each.....	7.00
-----------	------

Cast Iron Traps

Fig. 10100

Cast Iron Full S Trap, with Bell Top to fit Regular Iron Sink Collar, Brass Cleanout Screw, Adjustable Floor Flange, Outlet Threaded for iron pipe.

Size, inches.....	1¼	1½	2
Painted, each.....	1.50	2.00	3.25
Galvanized, each.....	2.25	2.90	4.50
Painted White Enamel, each.....	2.25	2.90	4.50

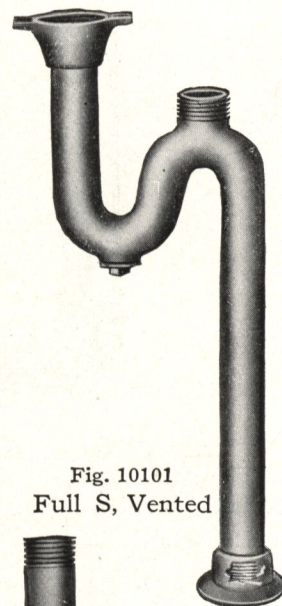
Fig. 10101
Full S, Vented

Fig. 10101

Cast Iron Full S Trap, with Iron Pipe Sink Collar to bolt to Sink, Brass Cleanout Screw, Adjustable Floor Flange, Outlet threaded for iron pipe and Vent threaded for 1¼-inch iron pipe.

Size, inches.....	1¼	1½	2
Painted, each.....	2.25	2.75	4.00
Galvanized, each.....	3.00	3.65	5.25
Painted White Enamel, each.....	3.00	3.65	5.25

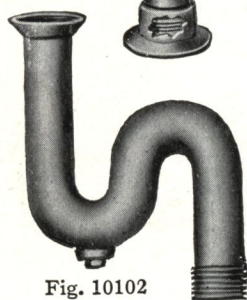
Fig. 10100
Full S, Plain

Fig. 10102

Cast Iron Short Full S Trap, with Bell Top to fit Regular Sink Collar, Brass Cleanout Screw and Outlet threaded for iron pipe.

Size, inches.....	1¼	1½	2
Painted, each.....	1.00	1.35	2.25
Galvanized, each.....	1.50	2.00	3.25
Add for 1¼-inch Vent.....	.75	.75	.75

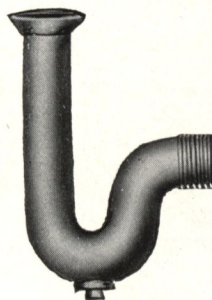


Fig. 10103

Cast Iron Half S Trap, with Bell Top to fit Regular Sink Collar, Brass Cleanout Screw and Outlet threaded for iron pipe.

Size, inches.....	1¼	1½	2
Painted, each.....	.75	1.00	2.00
Galvanized, each.....	1.15	1.50	2.75

Use of Tee on Outlet End provides Vent.

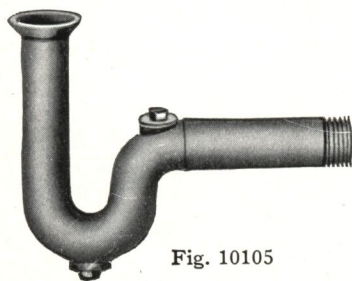


Fig. 10105

Cast Iron Half S Trap, with Bell Top to fit Regular Sink Collar, Double Brass Cleanout Screws, Extended Outlet 11½ inches from center of Inlet to end of Outlet and threaded for Male iron pipe.

Size, inches.....	1¼	1½
Painted, each.....	1.50	2.00
Galvanized, each.....	2.25	2.90

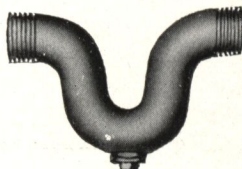


Fig. 10106

Cast Iron Running Trap, with Brass Cleanout Screw and threaded for Male iron pipe both ends.

Size, inches.....	1¼	1½	2
Painted, each.....	1.00	1.50	2.25
Galvanized, each.....	1.40	2.00	3.00

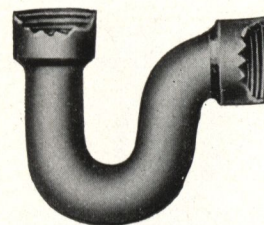


Fig. 10107

No. 1 Cast Iron Bath Trap, with Female Inlet and Outlet for 1½-inch iron pipe.

No. 2 made with Male Inlet and Female Outlet for 1½-inch iron pipe.

No. 3 made with Female Outlet and Nickel-plated Slip Inlet.

No.....	1	2	3
Painted, each.....	.80	.80	1.10
Galvanized, each.....	1.25	1.25	1.55

Note: Any of the above Traps can be furnished with Nickel-plated Slip Inlet Nut for 1¼, 1½ or 1½-inch O. D. tubing at a small additional cost.

Brass Wash Tray and Sink Combination Waste

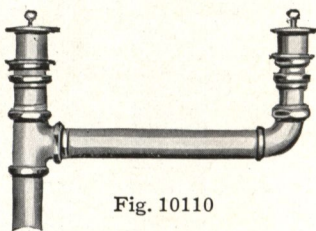


Fig. 10110
For Two Trays

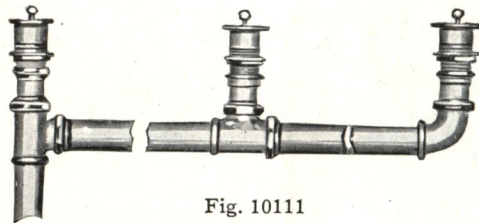


Fig. 10111
For Three Trays

Fig. 10110-11 Nickel-plated Brass Wash Tray Wastes, $1\frac{1}{4}$ inch per section.....	4.00
Fig. 10110-11 Nickel-plated Brass Wash Tray Wastes, $1\frac{1}{2}$ inch per section.....	4.50
Fig. 10110-11 Nickel-plated Brass Wash Tray Wastes, 2 inches per section.....	6.00

Continuous Wastes can be furnished in Rough or Polished Brass. Price on application.

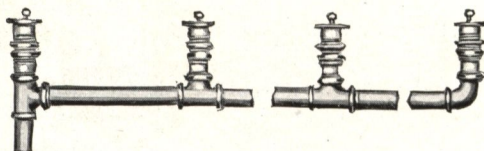


Fig. 10112
For Four Trays

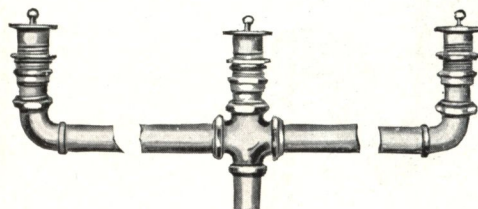


Fig. 10113
For Three Trays with Center Outlet

Fig. 10112-13 Nickel-plated Brass Wash Tray Wastes, $1\frac{1}{4}$ inch per section.....	4.00
Fig. 10112-13 Nickel-plated Brass Wash Tray Wastes, $1\frac{1}{2}$ inch per section.....	4.50
Fig. 10112-13 Nickel-plated Brass Wash Tray Wastes, 2 inches per section.....	6.00

Continuous Wastes can be furnished in Rough or Polished Brass. Price on application.

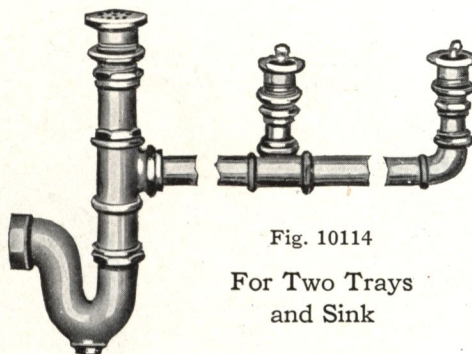


Fig. 10114
For Two Trays
and Sink

Fig. 10114 Nickel-plated Combined $1\frac{1}{2}$ -inch Wash Tray and Sink Waste with 2-inch Half S, N. Y. Regulation Trap, no Vent, Attached and Wash Tray Plugs and Sink Strainer.....	30.00
---	-------

Can be furnished for any number of tray or sink or lavatory combinations.

For other styles of Traps to be used with above Wastes, see pages 1005 and 1006.

Basin, Wash Tray and Sink Plugs

Basin Plugs

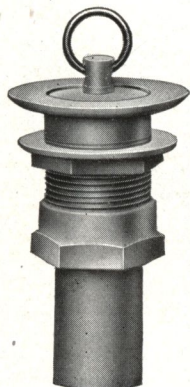


Fig. 10120

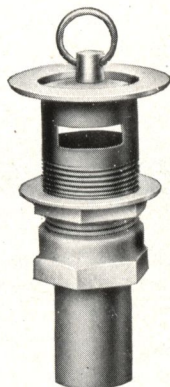
Common Overflow
Basin Plug

Fig. 10121

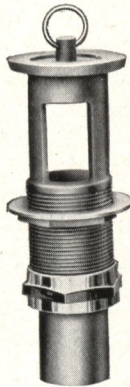
Patent Overflow
Basin Plug

Fig. 10122

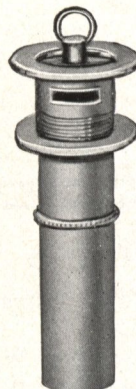
P. O. Plug for
Heavy
Earthenware

Fig. 10123

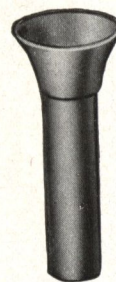
P. O. Plug
for Enamelled
Lavatories

Fig. 10124

Cup Sink
Connection

Fig. 10120	Nickel-plated C. O. Basin Plug, per dozen.....	12.00
Fig. 10121	Nickel-plated P. O. Basin Plug, per dozen.....	13.00
Fig. 10122	Nickel-plated P. O. Basin Plug, per dozen.....	30.00
Fig. 10123	Nickel-plated P. O. Basin Plug, per dozen.....	15.00
Fig. 10124	Nickel-plated Cup Sink Connection, per dozen.....	12.00

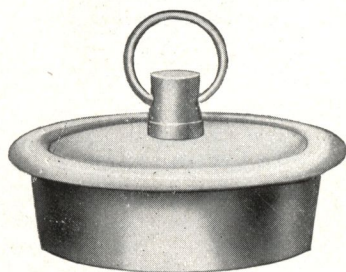


Fig. 10125

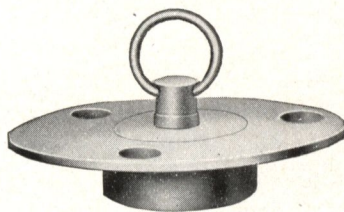
Bath Plug
Cast Brass

Fig. 10126

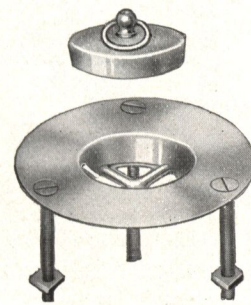
Wash Tray Plug
Cast Brass

Fig. 10127

Bolted Wash Tray Plug
Stamped Brass

Size, inches	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	4
Fig. 10125 Finished, per dozen.....	2.40	2.40	3.00	4.20	8.40	15.00	18.00	36.00
Fig. 10125 Nickel-plated, per dozen.....	3.00	3.00	3.60	4.80	9.60	17.40	21.00	42.00
Fig. 10126 Finished, per dozen.....			6.00	7.20	10.80	18.00	22.80	45.00
Fig. 10126 Nickel-plated, per dozen.....			7.80	9.00	13.80	21.00	27.00	54.00
Fig. 10127 Stamped Brass Bolted Wash Tray Plug and Bolts, per dozen.....								6.00

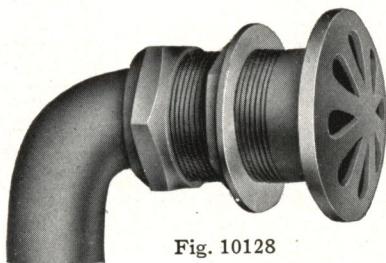


Fig. 10128

Brass Overflow for Earthenware Wash Tray

Diameter of Flange, $2\frac{3}{4}$ inches. Size of Coupling, $1\frac{1}{4}$ inches.

Finished, per dozen.....	18.00
Nickel-plated, per dozen.....	20.00

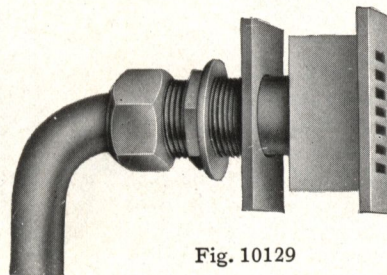


Fig. 10129

Brass Overflow for Earthenware Pantry Sink

Size of Flange, $1\frac{5}{8}$ x $2\frac{1}{2}$ inches. Size of Coupling, $\frac{3}{4}$ inch.

Finished, per dozen.....	27.00
Nickel-plated, per dozen.....	30.00

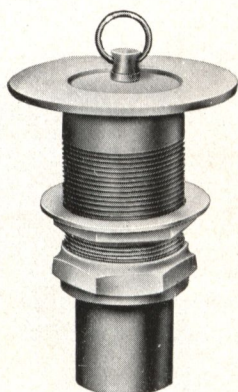


Fig. 10130
Wash Tray Plug, Lead Pipe

Wash Tray and Sink Plugs and Strainers

Fig. 10130

Brass Wash Tray or Sink Plug for Lead Pipe
For Soapstone, Slate or Earthenware Wash Trays or Sinks

Size Coupling Inches	Diameter Flange Inches	Finished Brass Per Dozen	Nickel-plated Per Dozen
1 1/2	2 7/8	30.00	36.00
1 1/2	3	30.00	36.00
1 1/2	3 1/4	30.00	36.00
1 1/2	3 5/8	30.00	36.00
1 1/2	3 1/2	30.00	36.00
2	3	60.00	75.00
2	3 1/4	60.00	75.00
2	3 5/8	60.00	75.00
2	3 1/2	60.00	75.00
2	3 3/4	60.00	75.00
2	4	60.00	75.00

Fig. 10131

Brass Wash Tray Plug for Iron Pipe
For Soapstone, Slate or Earthenware Wash Trays

Thread I. P. Size, Inches	Diameter Flange Inches	Finished Brass Per Dozen	Nickel-plated Per Dozen
1 1/4	2 7/8	15.60	18.60
1 1/4	3	15.60	18.60
1 1/4	3 1/4	15.60	18.60
1 1/4	3 5/8	15.60	18.60
1 1/4	3 1/2	15.60	18.60
1 1/2	2 7/8	24.00	28.80
1 1/2	3	24.00	28.80
1 1/2	3 1/4	24.00	28.80
1 1/2	3 5/8	24.00	28.80
1 1/2	3 1/2	24.00	28.80

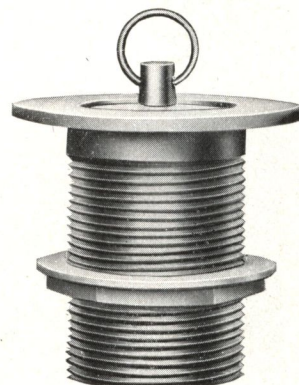


Fig. 10131
Wash Tray Plug, Iron Pipe

Fig. 10132

Brass Strainer for Earthenware Kitchen Sink
with Flat Loose-threaded Strainer

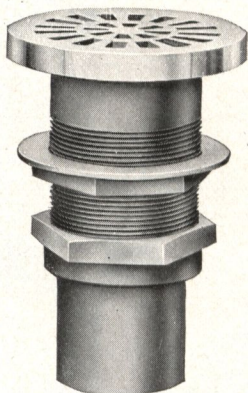


Fig. 10132. Sink Strainer

Size Coupling Inches	Diameter Flange Inches	Finished Brass Per Dozen	Nickel-plated Per Dozen
1 1/2	2 7/8	30.00	36.00
1 1/2	3	30.00	36.00
1 1/2	3 5/16	30.00	36.00
1 1/2	3 1/2	30.00	36.00
2	3 5/16	45.00	51.00
2	3 3/8	45.00	51.00
2	3 1/2	45.00	51.00
2	4	45.00	51.00

Fig. 10133

Brass Basin and Sink Plug, with Stand-Pipe

These Stand-pipes are made to fit any size Basin Plug shown on page 1012 or Sink Plug shown on page 1013.

Note: Always specify what height Stand-pipe is wanted, above the flange of the plug.

Nickel-plated, for lead pipe, per dozen..... 36.00

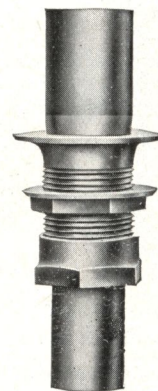


Fig. 10133
Basin or Sink Plug with Stand-pipe

Brass Flush and Supply Pipes For Closets and Urinals



Fig. 10140

Straight
Flush Pipe

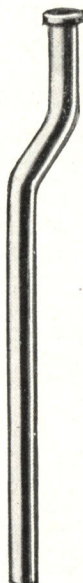


Fig. 10141

Offset
Flush Pipe



Fig. 10142

Straight
Supply Pipe

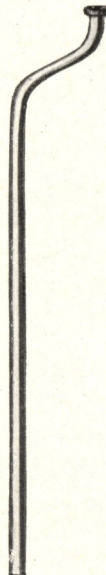


Fig. 10143

Offset
Supply Pipe

Supply Pipes for
low tanks 2 feet
long

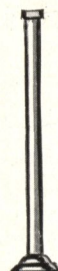


Fig. 10144

Straight
Plain

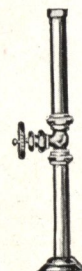


Fig. 10145

Straight
with Stop

Flush Pipes

Fig. 10140	Nickel-plated, 1 1/4-inch O. D. No. 22 Gauge Straight Flush Pipe, each.....	2.60
Fig. 10140A	Nickel-plated, 1 3/8-inch O. D. No. 20 Gauge Straight Flush Pipe, each.....	3.35
Fig. 10140B	Nickel-plated, 1 1/2-inch O. D. No. 18 Gauge Straight Flush Pipe, each.....	4.50
Fig. 10141	Nickel-plated, 1 1/4-inch O. D. No. 22 Gauge Offset Flush Pipe, each.....	2.75
Fig. 10141A	Nickel-plated, 1 3/8-inch O. D. No. 22 Gauge Offset Flush Pipe, each.....	3.15
Fig. 10141B	Nickel-plated, 1 1/2-inch O. D. No. 18 Gauge Offset Flush Pipe, each.....	5.00

Note: Other Gauges of Flush Pipes furnished. Prices on application.

Figs. 10142-3-4-5 Supply Pipes

Made in 3/8 and 1/2-inch Iron Pipe Size, and 5/8-inch Tube of Various Gauges and Lengths
Finished or Nickel-plated. Prices on application.

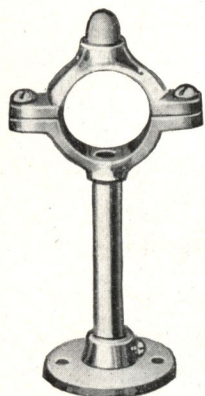


Fig. 10146

Flush Pipe Holder
with Bumper

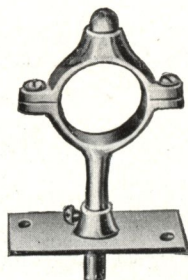


Fig. 10147

Flush Pipe Holder
with Bumper

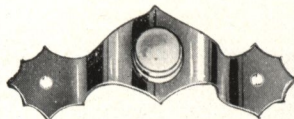


Fig. 10148

Bumper
Strap

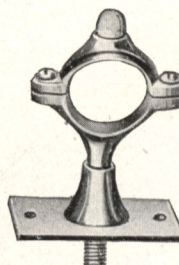


Fig. 10149

Flush Pipe Holder
with Bumper

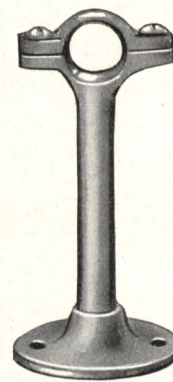


Fig. 10149A

Supply Pipe
Holder

Flush and Supply Pipe Holders

Furnished with Square
or Round Wall
Plates

Size of Tubing, inches.....	1 1/4	1 3/8	1 1/2
Fig. 10146 Nickel-plated, each....	1.00	1.00	1.00
Fig. 10147 Nickel-plated, each....	1.00	1.00	1.00
Fig. 10148 Nickel-plated, each....	.25	.30	.40

Size of Tubing, inches.....	1 1/4	1 3/8	1 1/2
Fig. 10149 Nickel-plated, each....	1.25	1.25	1.25
Size Tubing or Iron Pipe, inches...	3/8	1/2	5/8
Fig. 10149A Nickel-plated, each....	.75	.75	1.00

Closet Trimmings

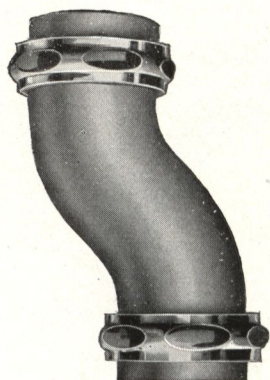


Fig. 10150 Offset

Fig. 10150

Nickel-plated Brass Offset, with Nuts
and Washers for Low Tanks

Size O. D., inches.....	2	2	2	2	2	2	2
Set C to C, inches.....	1	1½	2	2½	3	3½	4
Length, inches.....	6	6	6	6	6	6	6
Price, each.....	1.50	1.50	1.50	1.65	1.80	2.00	2.25

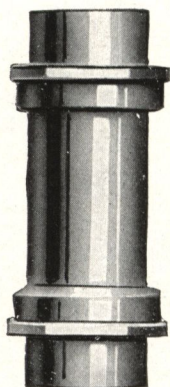
Fig. 10151
Straight
Connection

Fig. 10151

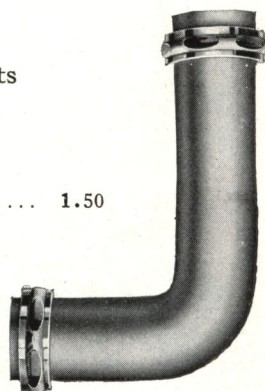
Nickel-plated Brass Straight Connection, with Nuts
and Washers for Low Tanks

Size, 2 inches O. D. x 6 inches long

Each..... 1.50

Fig. 10152

Nickel-plated Brass Elbow, with Nuts
and Washers for Low Tanks

Fig. 10152
Elbow

No. 1	2 inches O. D. x 3½ x 4 inches C to E, each	1.30
No. 2	2 inches O. D. x 4 x 6 inches C to E, each.....	1.50

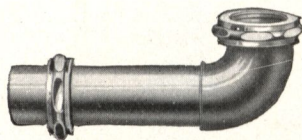


Fig. 10153

Nickel-plated Cast Brass Slip
Joint Elbow, with Nuts and
Washers for High Tanks.

Tail Piece 4½ inches long center to
end.

Size 1¼ x 1¼ inches, each....	.60
Size 1¼ x 1⅜ inches, each....	.60
Size 1½ x 1¼ inches, each....	1.05
Size 1½ x 1⅜ inches, each....	.80
Size 1½ x 1½ inches, each....	1.20

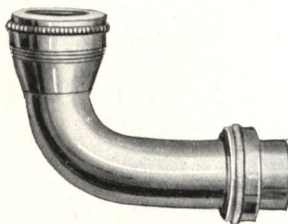


Fig. 10154

Nickel-plated Brass Tubing
Slip Joint Elbow, with Nuts and
Washers for High Tanks.

Tail Piece 4½ inches long center to
end.

Size 1¼ x 1¼ inches, each....	.50
Size 1¼ x 1⅜ inches, each....	.50

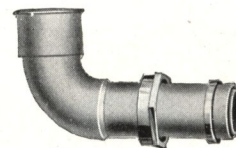


Fig. 10155

Best Quality Rubber Elbow,
with Brass Nut and Washer for
High Tanks.

Size 1¼ x 1¼ inches, each....	.50
-------------------------------	-----

Closet Trimmings

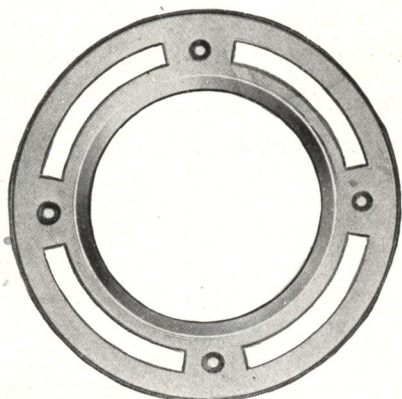


Fig. 10160

Light Cast Brass Closet
Floor Flange

Each..... .50

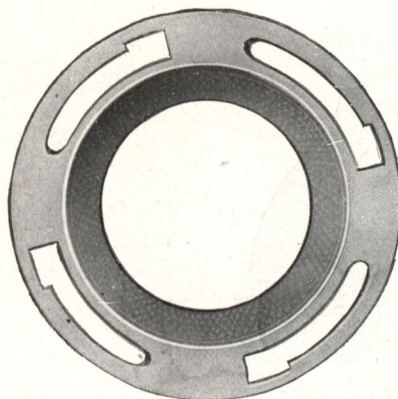


Fig. 10161

Heavy Cast Brass New York Regulation
Closet Floor Flange, with Graphite Asbestos
Gasket.

Each..... 1.00
Less Gasket..... .75

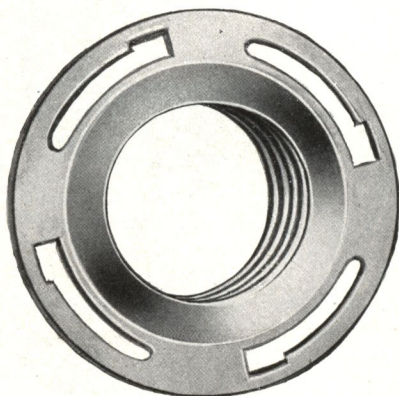


Fig. 10162

Fig. 10162

Heavy Cast Brass New York
Regulation Closet Floor Flange,
with Outlet threaded for 4-inch
iron pipe, female.

Each..... 3.00

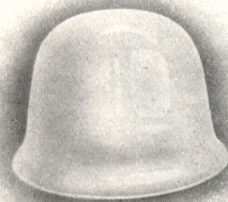


Fig. 10163

White Bone China
Bolt Cap

Each..... .06

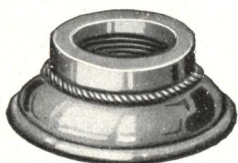


Fig. 10164

Nickel-plated Closet Slip
Joint Nut with Spun Flange

Size, inches....	1 1/4	1 3/8	1 1/2	2
Each.....	.30	.40	.40	.70

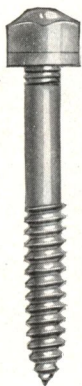


Fig. 10165

Fig. 10165
Brass Closet Screw,
with Loose Nickel-
plated Head.

Per hundred..... 15.00

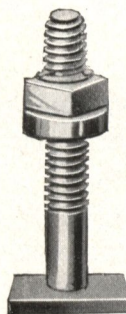


Fig. 10166

Fig. 10166
Brass Closet Bolt,
with Loose Open Top
Head.

Per hundred..... 15.00

Ball Cocks

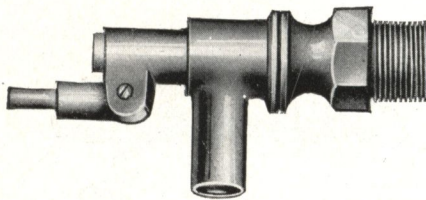


Fig. 10170

Improved Ball Cock, Iron Pipe

Size, inches.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Fig. 10170, per dozen	16.80	18.00	21.00	27.00	45.00	72.00	96.00	168.00	312.00	384.00	720.00	900.00

N. H. Hartford Ball Cocks

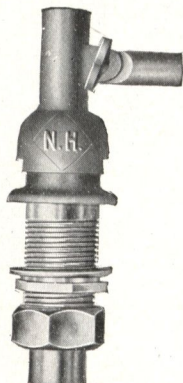


Fig. 10171

Hartford Bottom Supply
Ball Cock for high tank, with
Straight Nickel-plated Coup-
pling for $\frac{3}{8}$ -inch iron pipe.

Each..... 2.00



Fig. 10172

Hartford Top Supply Ball Cock for high tank,
with Rough Bent Coupling for $\frac{1}{2}$ -inch iron pipe.

Each..... 2.00
Add for Nickel-plated Coupling..... .25
Add for Hush Tube..... .15

Monarch Ball Cocks

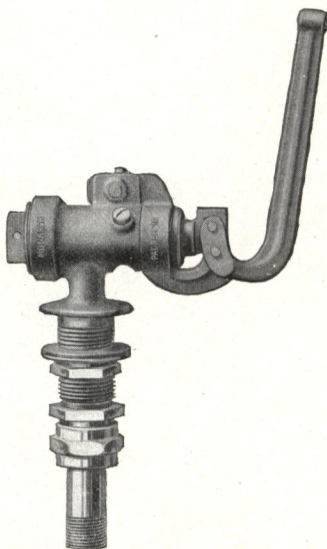


Fig. 10173

Monarch Ball Cock, Low-
down Bottom Supply for low
tank.

Each..... 2.00

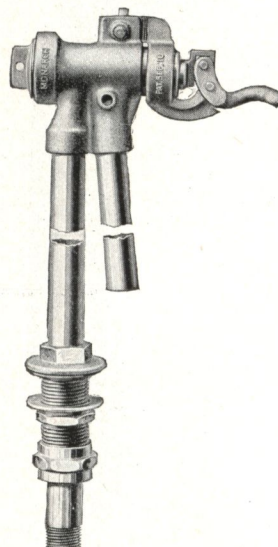


Fig. 10174

Monarch Ball Cock, Elevated
Bottom Supply for low tank.

Each..... 3.00

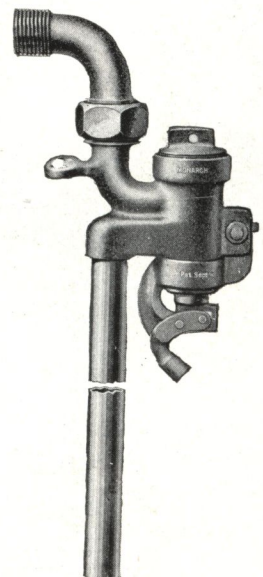


Fig. 10175

Monarch Ball Cock, Top Sup-
ply for high tank, with Hush
Tube, $\frac{3}{8}$ or $\frac{1}{2}$ -inch iron pipe,
male.

Each..... 2.50

Note: Monarch Ball Cocks are guaranteed for all pressures, are noiseless and have Reversible Seat.

Ball Cocks

U. S.

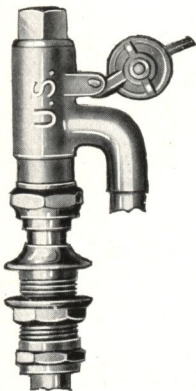


Fig. 10181
Bottom Supply

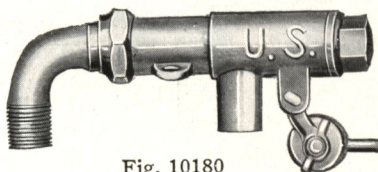


Fig. 10180

Top Supply

The U. S. Ball Cocks are simple and perfect. They have balanced valve, full size waterway, removable seat of best bronze metal, adjustable float device and are perfectly noiseless. Absolutely guaranteed.

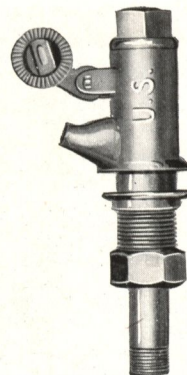


Fig. 10182
Submerged

Price List

Fig. 10180 Top Supply U. S. Ball Cock, per dozen.....	20.00
Fig. 10181 Bottom Supply U. S. Ball Cock, per dozen.....	30.00
Fig. 10182 Submerged Bottom Supply U. S. Ball Cock, per dozen.....	22.50
Fig. 10183 End Supply U. S. Ball Cock (not illustrated), per dozen.....	25.00

Erie Compound Lever Ball Cocks

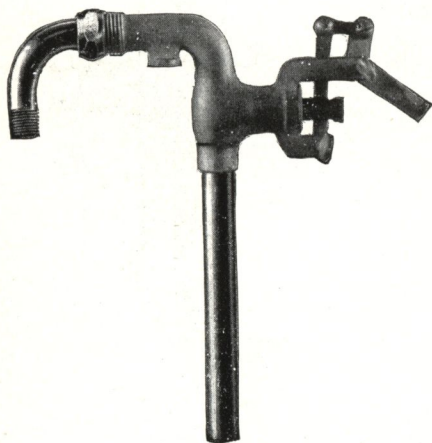


Fig. 10184

Top Supply for High Tanks

No. 1 1/4-inch S. O. T. Rough Nickel Coupling, per dozen.	16.20
No. 2 1/2-inch Iron Pipe Rough Nickel Coupling, per dozen.	17.00
No. 3 1/2-inch Iron Pipe Fin. and Nickel Coupling, per doz.	17.60

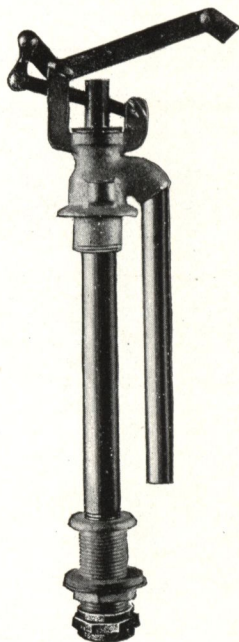


Fig. 10185

Elevated Type for Low Tanks

For low tanks, with Rough Nickel-plated Nuts, and Refill Tube.

Per dozen.....	25.20
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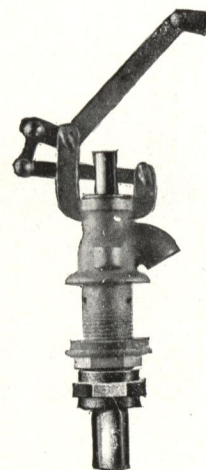


Fig. 10186

Bottom Supply

Bottom Supply, Lead Pipe, Rough Nickel Tail Piece.

Per dozen.....	14.40
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Ball Cocks

Ryan High Pressure Ball Cocks

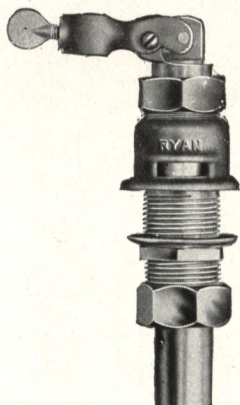


Fig. 10190

Ryan Bottom Supply Ball Cock for high tank, with 1/2-inch Nickel-plated Iron Pipe Size Coupling.

Each..... 3.00

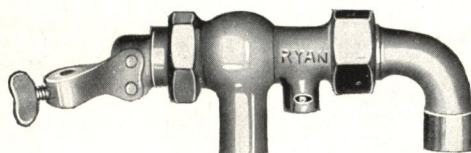


Fig. 10191

Ryan Top Supply Ball Cock for high tank, with 1/2-inch Male Iron Pipe Bent Coupling

Fig. 10191

1/2-inch with Rough Coupling, per dozen.....	30.00
3/4-inch I. P., no Coupling, per dozen.....	40.00
1-inch I. P., no Coupling, per dozen.....	54.00
1 1/4-inch I. P., no Coupling, per dozen.....	72.00
1 1/2-inch I. P., no Coupling, per dozen.....	96.00
2-inch I. P., no Coupling, per dozen.....	180.00

Prices include Hush Tubes.

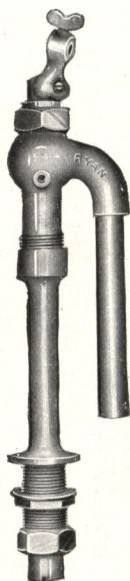


Fig. 10192. Elevated

Fig. 10192

Ryan Elevated Pattern Ball Cock for low tanks, with 1/2-inch Nickel-plated Coupling, Hush and Refill Tubes.

Each..... 4.00

Fig. 10193

Ryan Low Pattern Submerged Ball Cock for low tank, with 1/2-inch Nickel-plated Coupling and Refill Tubes.

Each..... 3.00

Note: Fig. 10193 Ball Cock can be used for End Supply and will be furnished with Hush Tube and Rough Bent Coupling at same price.

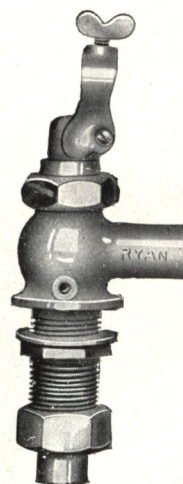


Fig. 10193. Submerged

U. S. Tank Valve

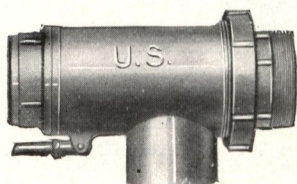


Fig. 10194. Tank Valve

Fig 10194

Price List with Copper Floats

Size, inches.....	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
Each.....	4.00	5.00	8.50	11.00	20.00	24.00	30.00	50.00

Syphon Tank Valves

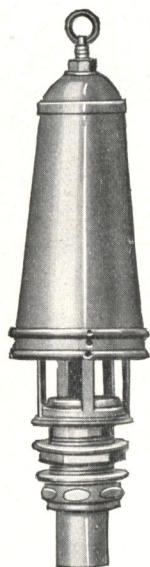


Fig. 10200

Nason All Brass Cone
Syphon Valve

Each.....3.00

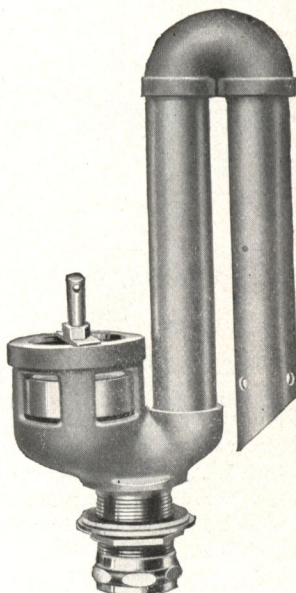


Fig. 10201

Nason Yankee All Brass Re-
turn Bend Syphon Valve, with
Housed Leather Washer.

Size, inches.....	1 1/4	1 1/2
Each.....	3.50	4.00

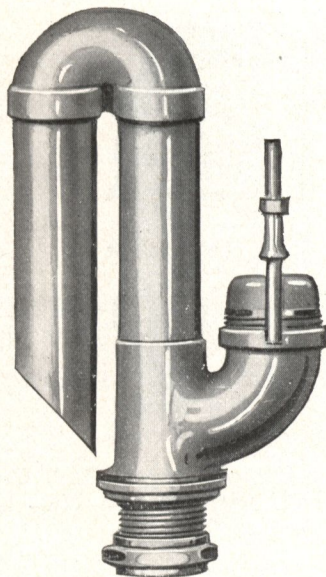


Fig. 10202

Nason C and A Return Bend
Syphon Valve

Each..... 5.00

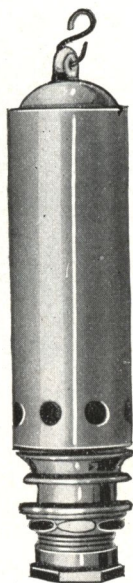


Fig. 10203

Nason Straight Syphon
Valve

Each..... 2.50



Fig. 10204

Nason Straight Syphon Valve
with Leather Seat

Each..... 3.00

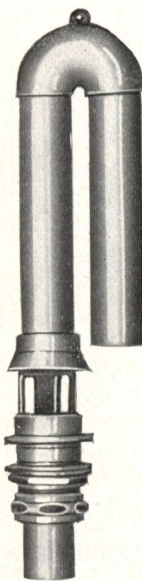


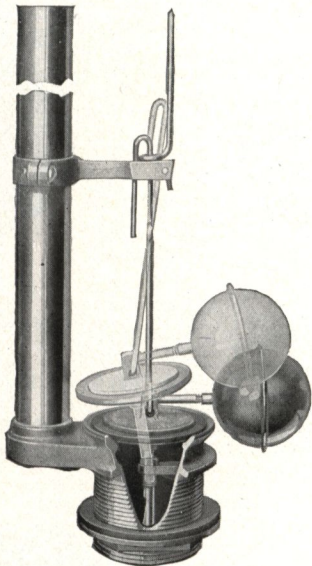
Fig. 10205

Nason Return Bend Telescope
Syphon Valve, with Rubber
Seat

Each..... 4.00

Syphon Closet Valves

For
High or Low Tanks
of any
Size or Style



Simple
in Construction and
Positive in
Action

Fig. 10210

Monarch Positive Flush Valve

Fig. 10210 For Low Tanks, each.....	2.50
Fig. 10210A For High Tanks, each.....	3.25

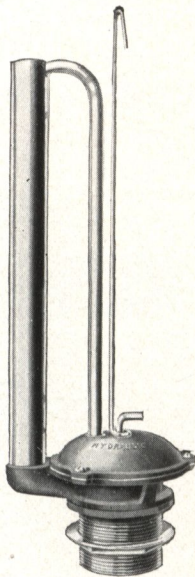


Fig. 10211

Hydraulic Flush Valve for
High or Low Tanks

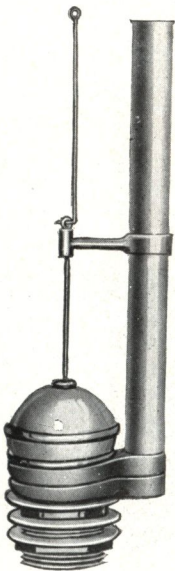


Fig. 10212

Douglas Type Flush Valve
for Low Tanks

Each.....	3.00	Each.....	3.00
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Escutcheons

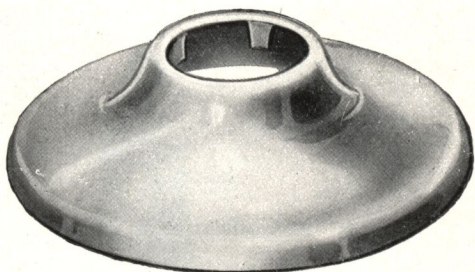


Fig. 10220

Wrought Brass Sure Grip Escutcheon

Size, inches.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Diameter at Base, inches.....	$2\frac{1}{2}$	$2\frac{1}{2}$	3	3	$3\frac{1}{2}$	$3\frac{1}{2}$	$3\frac{1}{2}$
Height, inch.....	$\frac{11}{16}$	$\frac{11}{16}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$
Fig. 10220 Finished or Nickel-plated, per dozen.....	1.50	1.50	1.75	1.80	2.00	2.00	2.50
Fig. 10221 Finished or Nickel-plated, per dozen.....	2.00	2.00	2.25	2.30	2.50	2.50	3.00

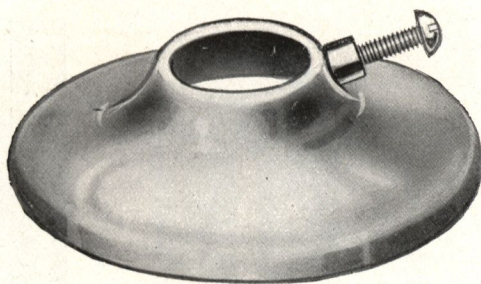


Fig. 10221

Wrought Brass Set Screw Escutcheon

Size, inches.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Diameter at Base, inches.....	$2\frac{1}{2}$	$2\frac{1}{2}$	3	3	$3\frac{1}{2}$	$3\frac{1}{2}$	$3\frac{1}{2}$
Height, inch.....	$\frac{11}{16}$	$\frac{11}{16}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$
Fig. 10220 Finished or Nickel-plated, per dozen.....	1.50	1.50	1.75	1.80	2.00	2.00	2.50
Fig. 10221 Finished or Nickel-plated, per dozen.....	2.00	2.00	2.25	2.30	2.50	2.50	3.00

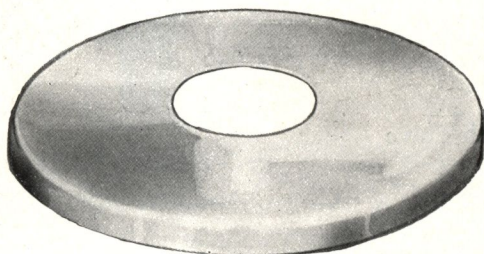


Fig. 10222

Wrought Brass Shallow Escutcheon

Size, inches.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Diameter at Base, inches.....	$2\frac{3}{4}$	$2\frac{3}{4}$	$2\frac{3}{4}$	$3\frac{3}{8}$	$3\frac{1}{2}$	$3\frac{1}{2}$	$3\frac{1}{2}$
Height, inch.....	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$
Fig. 10222 Finished or Nickel-plated, per dozen.....	2.00	2.00	2.25	2.30	2.50	2.50	3.00

Fig. 10222

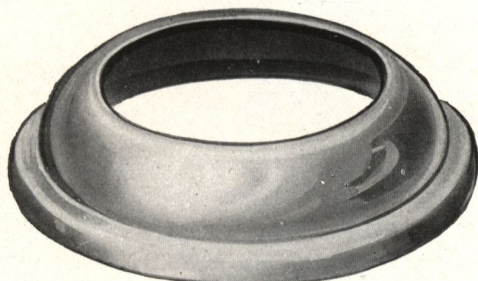


Fig. 10223

Wrought Brass Closet Spud Escutcheon

Size, inches.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Diameter at Base, inches.....	$2\frac{3}{4}$	$2\frac{3}{4}$	$2\frac{3}{4}$	$3\frac{3}{8}$	$3\frac{1}{2}$	$3\frac{1}{2}$	$3\frac{1}{2}$
Height, inch.....	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$
Fig. 10222 Finished or Nickel-plated, per dozen.....	2.00	2.00	2.25	2.30	2.50	2.50	3.00

Fig. 10223

Size Opening to fit Closet Spud, inches.....	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Diameter at Base, inches.....	$2\frac{3}{4}$	3	$3\frac{1}{2}$
Fig. 10223 Finished or Nickel-plated, per dozen.....	2.50	2.50	3.00

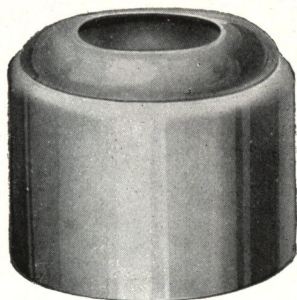


Fig. 10224

Wrought Brass Box Escutcheon

Made any size to order. Price on application

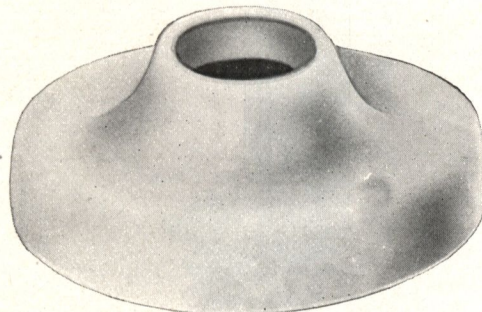


Fig. 10225

Bone China Escutcheon

Size, inches.....	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Diameter, inches.....	$2\frac{3}{4}$	$2\frac{3}{4}$	$2\frac{3}{4}$	$2\frac{3}{4}$	$3\frac{3}{4}$	$3\frac{3}{4}$	4
Each.....	.25	.25	.30	.30	.30	.40	.50

When ordering Escutcheons specify whether they are to be tubing or iron pipe size.

Brass Strainers and Floor Drains

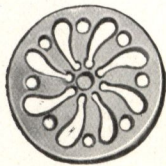


Fig. 10230

Fancy Strainer

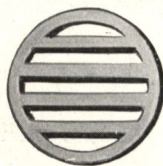


Fig. 10231

Heavy Bar Strainer

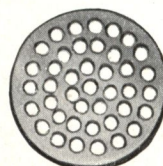


Fig. 10232

Round Strainer

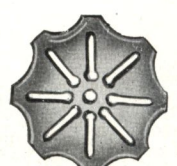
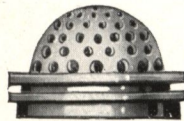
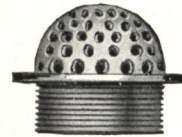
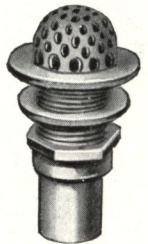


Fig. 10233

Convex Strainer

Size, inches	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	4	5	6
Fig. 10230 Finished, per dozen	1.20	1.20	1.20	1.80	1.80	2.40	3.00	4.80	9.00	12.00
Fig. 10230 Nickel-plated, per dozen	1.80	1.80	1.80	2.40	3.00	4.20	6.00	8.40	13.80	18.00
Fig. 10231 Finished, per dozen							6.00	8.40	10.20	14.40
Fig. 10231 Nickel-plated, per dozen							9.00	12.00	15.00	20.40
Fig. 10232 Finished, per dozen	1.20	1.20	1.20	1.80	1.80	2.40	3.00	4.80	9.00	12.00
Fig. 10232 Nickel-plated, per dozen	1.80	1.80	1.80	2.40	3.00	4.20	6.00	8.40	13.80	18.00
Fig. 10233 Finished, per dozen	1.80	1.80	1.80	3.00	3.00	3.60	4.80	7.20	13.20	16.20
Fig. 10233 Nickel-plated, per dozen	2.40	2.40	2.40	3.60	4.20	5.40	7.80	10.80	18.00	22.20

Fig. 10234
Raised Strainer
with FlangeFig. 10235
Raised Strainer
with Trap ScrewFig. 10236
Raised Strainer
for Iron PipeFig. 10237
Raised Strainer
for Urinal Trough

Size, inches	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
Fig. 10234 Finished, per dozen	8.40		12.00	18.00	24.00
Fig. 10234 Nickel-plated, per dozen	10.20		15.00	22.20	30.00
Fig. 10235 Finished, per dozen	15.00	21.00	30.00		48.00
Fig. 10235 Nickel-plated, per dozen	17.40	24.00	34.20		54.00
Fig. 10236 Finished, per dozen	13.20	18.00	26.40		45.00
Fig. 10236 Nickel-plated, per dozen	15.00	21.00	30.00		51.00
Size, inches	$1\frac{1}{4} \times 3$		$1\frac{1}{2} \times 3$	$1\frac{1}{2} \times 3\frac{1}{2}$	2×4
Fig. 10237 Finished, per dozen	30.00		42.00	48.00	60.00
Fig. 10237 Nickel-plated, per dozen	36.00		48.00	54.00	66.00

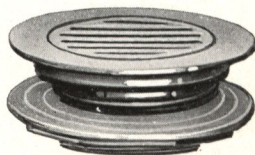
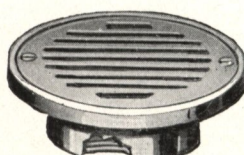
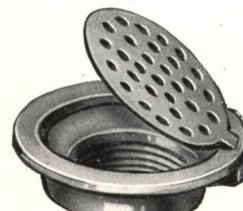
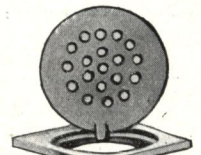
Fig. 10238
Brass Strainer
for Porcelain Urinal
StallFig. 10239
Brass Floor Drain
Tapped
for Iron PipeFig. 10239A
Brass Floor Drain
with Hinged Cover
Tapped for Iron PipeFig. 10239B
Cesspool Plate
with
Hinged Cover

Fig. 10238 Brass Strainer for Solid Porcelain Urinal Stall, Nickel-plated, Diameter Top, $4\frac{1}{2}$ inches, each	2.75				
Fig. 10239 Brass Floor Drain, Tapped for Iron Pipe, $4\frac{1}{2} \times 1\frac{1}{2}$ inches, each	Polished Top	Nickel-plated Top			
Fig. 10239 Brass Floor Drain, Tapped for Iron Pipe, 5×2 inches, each	2.50	2.75			
Fig. 10239 Brass Floor Drain, Tapped for Iron Pipe, 6×3 inches, each	3.00	3.25			
Fig. 10239A Brass Floor Drain, with Hinged Cover, Tapped for Iron Pipe, 6×3 inches, each	4.00	4.25			
Fig. 10239A Brass Floor Drain, with Hinged Cover, Tapped for Iron Pipe, 8×4 inches, each	4.50	4.75			
Fig. 10239A Brass Floor Drain, with Hinged Cover, Tapped for Iron Pipe, 9×6 inches, each	8.00	8.50			
Fig. 10239A Brass Floor Drain, with Hinged Cover, Tapped for Iron Pipe, 9×6 inches, each	10.00	10.50			
Size, inches	4 x 4	6 x 6	8 x 8	9 x 9	12 x 12
Fig. 10239B Plain Iron Cesspool, with Hinged Cover, each		.36	.75	1.00	1.50
Fig. 10239B Galvanized Iron Cesspool, with Hinged Cover, each		.60	1.25	1.50	2.00
Fig. 10239B Brass Polished Cesspool, with Hinged Cover, each	1.50	2.50	5.00	6.00	9.00

Cesspool Plates and Strainers

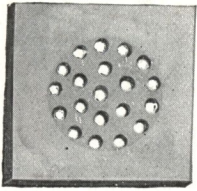


Fig. 10240

Fig. 10240

Square Cesspool Plate with Holes

Size, inches	6 x 6	8 x 8	9 x 9	10 x 10	12 x 12
Plain Iron, each	.30	.60	.70	.80	1.50
Galvanized Iron, each	.45	.90	1.00	1.20	2.00
Polished Brass, each	2.00	4.00	5.00	6.00	8.00

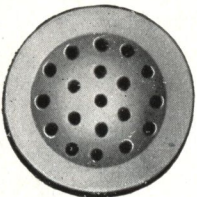


Fig. 10241

Fig. 10241

Round Cesspool Plate with Holes

Size Diameter, inches	4	5	6	7	8	9	10	12
Plain Iron, each	.20	.25	.30	.40	.60	.70	.80	1.00
Galvanized Iron, each	.35	.40	.45	.70	.90	1.00	1.20	2.00
Polished Brass, each			2.00	3.00	4.00	5.00	6.00	8.00



Fig. 10242

Fig. 10242

Round Bar Strainer

Size Diameter, inches	4	5	6	7	8	9
Plain Iron, each	.20	.25	.30	.50	.65	.80

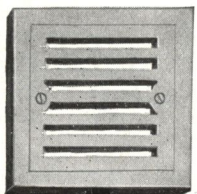


Fig. 10243

Fig. 10243

Square Cesspool Grate with Detachable Cover

Size, inches	6 x 6	9 x 9
Plain Iron, each	.80	1.00
Galvanized Iron, each	1.20	1.50
Polished Brass, each	3.00	6.00

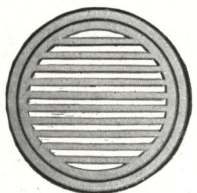


Fig. 10244

Fig. 10244

Round Bar Strainer with Removable Center

Size Diameter, inches	9	12	16
Plain Iron, each	1.50	2.00	5.00

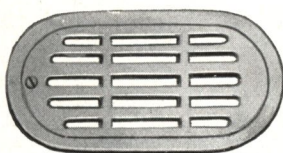


Fig. 10245

Fig. 10245

Fresh Air Grate

Size, inches	6½ x 14	7½ x 15	11 x 17
Plain Iron, each	1.25	1.50	3.00
Galvanized Iron, each	1.50	2.00	4.00

Cess-pools and Floor Drains

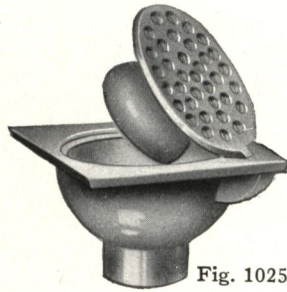


Fig. 10250

Cast Iron Cess-pool with Bell Trap and Hinged Cover. Caulked Outside

Size	Standard		Extra Heavy		Standard Iron Body with Finished Brass Top	
	Plain	Galv'd	Plain	Galv'd	Plain	Galv'd
Top 6 x 6 inches, Outlet 2 inches, each.....	1.00	1.50	1.50	2.25	4.00	4.50
Top 8 x 8 inches, Outlet 3 inches, each.....	1.25	2.00	1.75	2.75	.....	.....
Top 9 x 9 inches, Outlet 3 inches, each.....	1.50	2.25	1.85	3.00	8.00	8.50
Top 9 x 9 inches, Outlet 4 inches, each.....	1.75	2.75	3.00	4.50	.....	.....
Top 10 x 10 inches, Outlet 4 inches, each.....	2.00	3.00	3.50	5.25	10.00	11.00
Top 12 x 12 inches, Outlet 4 inches, each.....	2.50	3.75	4.00	6.00	12.00	13.50

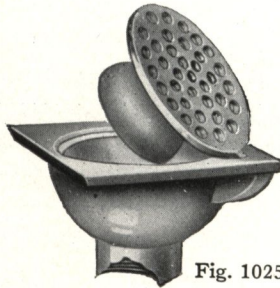


Fig. 10251

Cast Iron Cess-pool, with Bell Trap and Hinged Cover
Outlet Tapped for Iron Pipe

Size	Standard All Iron		Standard Iron Body with Finished Brass Top	
	Plain	Galv'd	Plain	Galv'd
Top 6 x 6 inches, Outlet Tapped 1½ inches, Iron Pipe, each.....	1.25	1.75	4.00	4.50
Top 6 x 6 inches, Outlet Tapped 2 inches, Iron Pipe, each.....	1.50	2.25	4.75	5.25
Top 9 x 9 inches, Outlet Tapped 3 inches, Iron Pipe, each.....	2.50	3.75	8.75	9.25
Top 10 x 10 inches, Outlet Tapped 4 inches, Iron Pipe, each.....	3.50	5.25	11.00	12.00
Top 12 x 12 inches, Outlet Tapped 4 inches, Iron Pipe, each.....	5.00	7.50	12.00	13.50

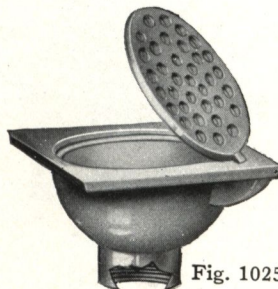


Fig. 10252

Cast Iron Cess-pool, with Hinged Cover, No Bell Trap
Outlet Tapped for Iron Pipe

Size	Standard All Iron		Standard Iron Body with Finished Brass Top	
	Plain	Galv'd	Plain	Galv'd
Top 6 x 6 inches, Outlet Tapped 2 inches, Iron Pipe, each.....	1.50	2.25	4.00	4.50
Top 7½ x 7½ inches, Outlet Tapped 3 inches, Iron Pipe, each.....	2.00	3.00	8.00	8.50
Top 10 x 10 inches, Outlet Tapped 4 inches, Iron Pipe, each.....	3.00	4.50	10.00	11.00
Top 12 x 12 inches, Outlet Tapped 4 inches, Iron Pipe, each.....	5.00	7.50	12.00	13.50

Depth over all 7½ x 7½ inches—4 inches.
Depth over all 10 x 10 inches—5¼ inches.

Cess-pools and Floor Drains

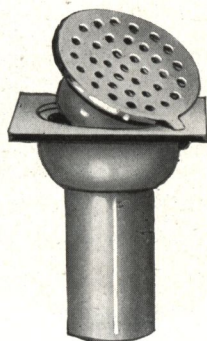


Fig. 10260

Cast Iron Cess-pool, with Bell Trap and Hinged Cover, Long Spigot End for Caulking

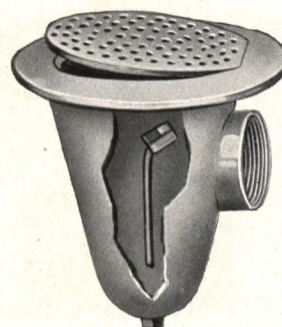


Fig. 10261

Cast Iron Combination Floor Drain and Trap with Hinged Cover, Outlet Tapped for Iron Pipe

Fig. 10260

Size	
Top 6 x 6 inches, Outlet 2 inches, Depth 6½ inches, each.....	
Top 8 x 8 inches, Outlet 3 inches, Depth 9½ inches, each.....	
Top 9 x 9 inches, Outlet 3 inches, Depth 9½ inches, each.....	
Top 10 x 10 inches, Outlet 4 inches, Depth 12 inches, each.....	
Top 13 x 13 inches, Outlet 4 inches, Depth 13½ inches, each.....	

Standard All Iron		Standard Iron Body with Finished Brass Top	
Plain	Galv'd	Plain	Galv'd
1.50	2.25	5.00	5.50
2.00	3.00	8.00	8.75
2.25	3.50	9.00	10.00
3.00	4.50	11.00	12.50
4.75	7.00	12.00	13.50

Fig. 10261

Size	
Top 6 inches, Outlet Tapped 2 inches, Iron Pipe, Depth 7½ inches, each.....	
Top 8 inches, Outlet Tapped 2 inches, Iron Pipe, Depth 8½ inches, each.....	
Top 9 inches, Outlet Tapped 2 inches, Iron Pipe, Depth 9 inches, each.....	
Top 10 inches, Outlet Tapped 3 inches, Iron Pipe, Depth 9½ inches, each.....	
Top 11 inches, Outlet Tapped 3 inches, Iron Pipe, Depth 11 inches, each.....	
Top 13 inches, Outlet Tapped 4 inches, Iron Pipe, Depth 11½ inches, each.....	

Standard All Iron		Iron Body with Finished Brass Top	
Plain	Galv'd	Plain	Galv'd
4.00	6.00	8.00	8.50
6.00	9.00	12.00	13.00
6.00	9.00	12.00	13.00
8.00	12.00	15.00	16.50
8.00	12.00	15.00	16.50
10.00	15.00	20.00	22.00

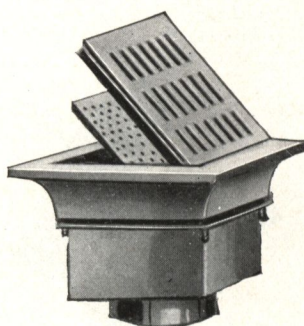


Fig. 10262

Extra Heavy Stable Drain
with Double Grating and Flashing Space

Top 12 x 12 inches, Outlet 3 inches, for Caulking, each.....	
Top 12 x 12 inches, Outlet 4 inches, for Caulking, each.....	
Top 16 x 16 inches, Outlet 4 inches, for Caulking, each.....	
Top 16 x 16 inches, Outlet 5 inches, for Caulking, each.....	
Top 16 x 16 inches, Outlet 6 inches, for Caulking, each.....	
Top 16 x 16 inches, Outlet 5 inches, for Screwed Pipe, each.....	
Top 16 x 16 inches, Outlet 6 inches, for Screwed Pipe, each.....	

Plain	Galv'd
8.00	12.00
8.00	12.00
10.00	15.00
9.00	13.00
10.00	15.00
10.00	15.00
12.00	18.00

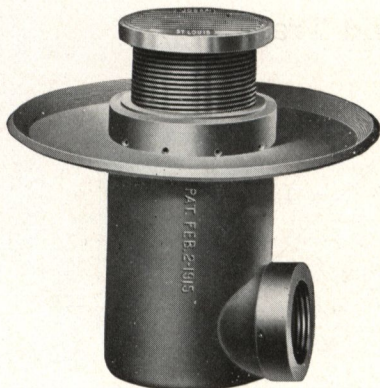


Fig. 10270

No. 203—Josam Combined Trap and Drain

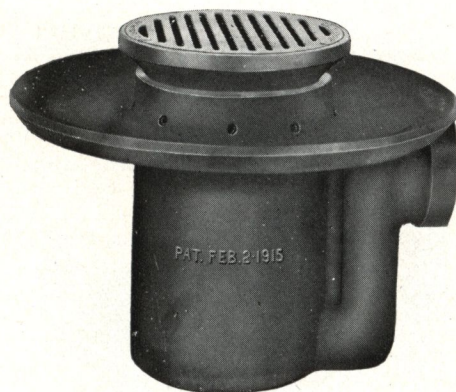


Fig. 10271

No. 203A—Josam Combined Trap and Drain

Josam Combined Traps and Drains

Fig. 10270

No. 203 Josam Combined Trap and Drain is something entirely new along the lines of floor drains and Bell traps, as the row of holes just above the large flange cup makes it a double drainage drain. It is so made that it can be used for marble, porcelain or enameled iron shower receptors, as well as for tile, cement or composition floors of any kind, and leakage is impossible owing to the double drain. The body is cast iron, with 5-inch nickel-plated brass strainer and outlet tapped for 2-inch iron pipe.

Price, each..... 12.00

Fig. 10271

No. 203A Josam Combined Trap and Drain is the same as No. 203 with exception of trap being closed seal and has short strainer connection for tile or cement floors.

Price, each..... 12.00

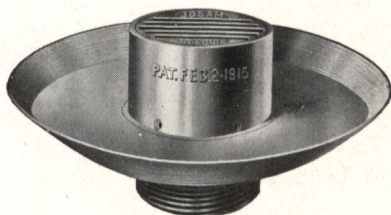


Fig. 10272

No. 100—Shower and Floor Drain

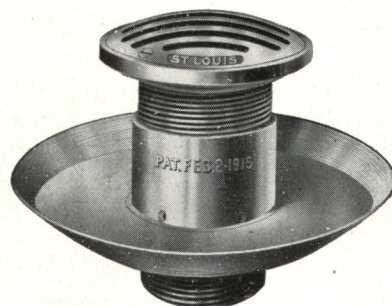


Fig. 10273

No. 300—Urinal Drain

Fig. 10272

No. 100 Josam All Brass Shower and Floor Drain, with Double Drainage feature, with 2-inch Nickel-plated Brass Strainer and 2-inch Outlet threaded for iron pipe. Price, each..... 6.50

Fig. 10273

No. 300 Josam Urinal Drain, Iron Body with 4-inch Nickel-plated Brass Strainer and 2-inch Outlet threaded for iron pipe, each..... 6.80

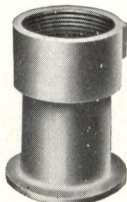


Fig. 10275
Soil Pipe
Connection

Fig. 10274

No. 301 same as No. 300, with 5-inch Nickel-plated Brass Strainer and Outlet threaded for 3-inch iron pipe, each..... 9.60

Fig. 10275-6

Tail Pieces for Nos. 100-300 and 301 Josam Drains for iron or lead pipe connections. Price, each..... .70

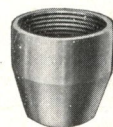


Fig. 10276
Lead Pipe
Connection

Donovan Floor Drain and Trap

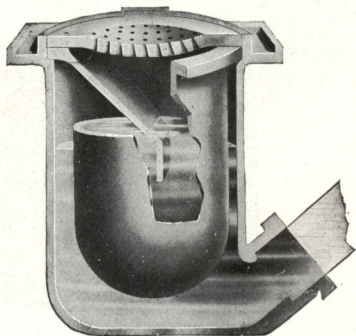


Fig. 10280

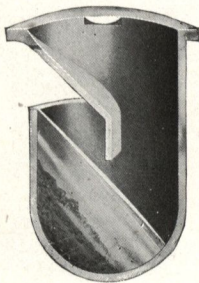


Fig. 10280A

Donovan Floor Drain Trap and Sand Arrester

Interior Chamber

The Donovan Floor Drain Trap and Sand Arrester is especially adapted for garages, stables, hotel kitchens, boiler rooms, bath houses, wash rooms and courtyards, where water heavily loaded with sand, mud, sawdust and other refuse tends to quickly clog the ordinary drain, making it necessary in many cases to break the pipe line to remove the obstruction. The use of this drain effectually prevents such occurrence.

The accompanying cuts show construction of the drain. Fitted into the outer shell is an inner compartment of cylindrical form having a partition and opening near the top. This can be easily lifted out.

Material carried into the drain must pass through this interior chamber before reaching the outlet leading to the sewer, and during the passage through this chamber a large proportion of dirt is deposited.

The dirt does not obstruct the full flow of water until the interior chamber is practically filled, when it must be removed and emptied, and as there are no bolts or screws to loosen or remove, the interior chamber is easily lifted out.

Gasoline entering the trap passes into the interior chamber and evaporates through the vent opening.

Stopping of the trap is impossible, as no object of sufficient size can pass through the interior chamber.

Lip on flange insures tight joint at floor.

Deep water seal may be formed when connection between floor drain and soil pipe is made.

Fig. 10280

No. 1	Two-inch Outlet, all Iron, 10-inch Square Top, 10 inches deep, each	7.50
No. 1	Two-inch Outlet, Brass Top, 10-inch Square Top, 10 inches deep, each	11.50
No. 2	Three-inch Outlet, all Iron, 10-inch Square Top, 10 inches deep, each	8.50
No. 2	Three-inch Outlet, Brass Top, 10-inch Square Top, 10 inches deep, each	12.50
No. 3	Four-inch Outlet, all Iron, 16-inch Square Top, 14½ inches deep, each	21.50

Pennie's Back Water and Sewer Gas Valve

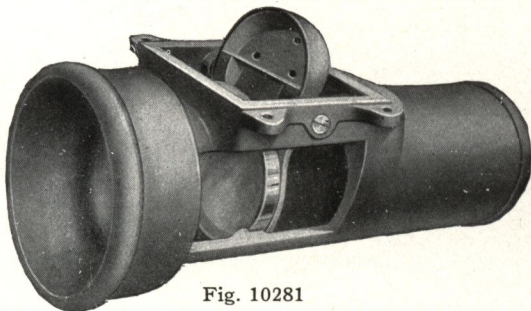


Fig. 10281

With Cover Removed and Showing Working Parts

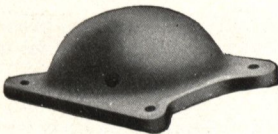


Fig. 10281A

Cover

This appliance is a perfect seal against back water, gas and vermin and prevents poisonous gases emanating from the sewer. Absolutely positive in operation, and will operate in any position. When used upright or inclining, take off cover and pour sufficient lead in cup to make it swing to required angle. The valve or disc need not be removed when cup is being weighted to regulate it. Place bottom of cup on smooth surface or wiping cloth and the holes being countersunk will form an anchor for the lead. Will stand smoke and other tests.

Fig. 10281. Painted Black

Size, inches	2	3	4	5	6	8	10	12
List Price	5.00	6.00	8.00	11.00	14.00	22.00	50.00	60.00

Electric Weld Combination Boiler and Gas Water Heaters

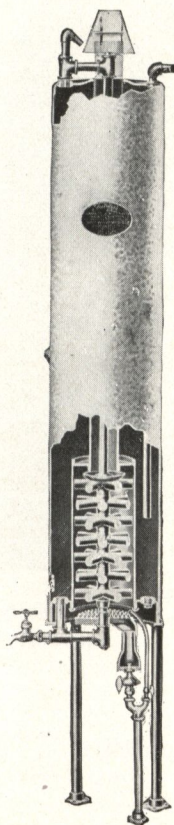


Fig. 10290

Non-automatic
Combination Boiler and
Gas Water Heater

parts are surrounded by water. There is no heat leak. Every unit of heat is kept at work on the water.

The result is—a cool kitchen, satisfaction and comfort to the user, and the user's enthusiastic endorsement of the Electric Weld Combination Boiler.

The shell is extra heavy galvanized iron and fully guaranteed.

Circulation in the Electric Weld Combination Boiler is very rapid, both in the coils and within the boiler.

The cold water discharges at the bottom of the boiler through the circulating tube, passes to the coils, is there heated, and is returned to the top of the boiler.

The result is a much higher efficiency than is possible to obtain with other forms of gas water heaters because of the fact that every possible atom of heat is absorbed by the water and there is no waste.

When water is drawn off, the hot water is withdrawn first, because of its lower specific gravity. The user invariably obtains the benefit of every particle of heat generated.

It gives a hot bath for a cent with gas at 1.00 a thousand. A barrel of water at 140 degrees for two cents. Ample for family laundry for a few cents. Unlimited hot water for a family using several bath rooms, laundry and kitchen for a cent an hour.

The heating parts of the Electric Weld Combination Boiler are of brass and the construction is very substantial. No delicate parts to get out of order.

The Electric Weld Burner with adjustable mixer gives perfect combustion, as all of the heating

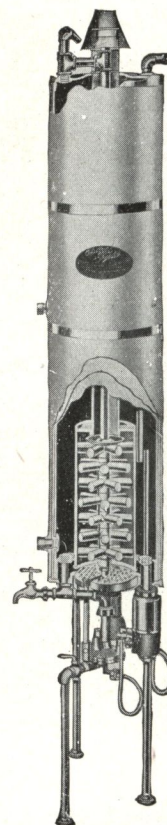


Fig. 10291

Automatic Storage System of Gas Water Heating with Quick-acting Thermomixer and Asbestos Jacket with Canvas Covering.

Price List

Fig. 10290

Non-automatic

No.	Size of Shell Ft. In.	Storage Capacity Gallons	Price
18	3 x 12	15	30.00
24	4 x 12	18	32.00
30	4 x 14	20½	35.00
40	4 x 16	28½	40.00
52	4 x 18	38	50.00
66	4 x 20	49½	60.00

Above prices include Ring Stand and Legs as shown.

Fig. 10291

Automatic

No.	Size of Shell Ft. In.	Heating Capacity Gallons Per Hour 140°	Price
18	3 x 12	62	70.00
24	4 x 12	68	73.00
30	4 x 14	70	75.00
40	4 x 16	78	85.00
52	4 x 18	86	100.00
66	4 x 20	96	115.00

Brown's Seamless Drawn Copper Range Boilers

Regular pressure, tested to 200 pounds internal pressure to square inch, and are guaranteed to a working pressure of 150 pounds

Fig. 10300

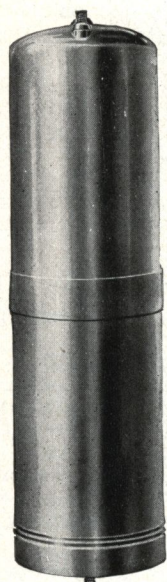


Fig. 10300
Brown's Copper
Range Boiler

Capacity Gallons	Height Inches	Diameter Inches	Price Regular Pressure	Price Extra Heavy Pressure	Boxing Net Extra
30	60	12	37.50	50.00	1.00
35	53	14	44.00	56.50	1.00
40	60	14	50.00	62.50	1.25
45	68	14	56.50	69.00	1.25
50	60	16	62.50	81.50	1.50
60	70	16	75.00	100.00	1.50
80	96	16	100.00	131.50	2.00
60	44	20	100.00	131.50	2.00
80	59	20	125.00	156.50	2.00
100	76	20	156.50	187.50	2.75
100	60	24	169.00	200.00	2.75
120	65½	24	187.50	219.00	3.00
125	69	24	194.00	225.00	3.50
150	78½	24	219.00	250.00	4.00
180	92½	24	262.50	294.00	4.00
200	103	24	300.00	331.50	4.00
250	129	24	406.50	437.50	6.00
300	155	24	531.50	562.50	8.00

Extra heavy pressure, tested to 300 pounds internal pressure to square inch, and are guaranteed to a working pressure of 200 pounds.

Horizontal same price as Vertical.

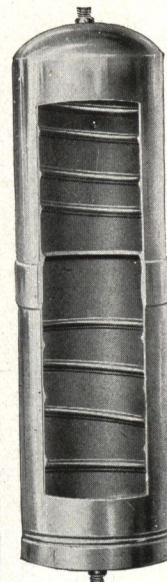


Fig. 10300A
Sectional

Fig. 10301

The Modern Copper Range Boiler
200 Pounds Test

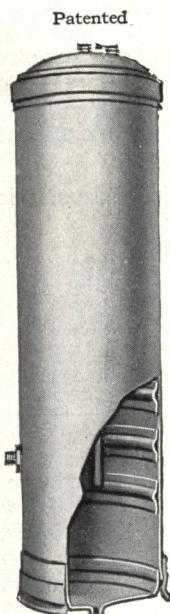


Fig. 10301
Modern

Capacity Gallons	Height Inches	Diam. Inches	Price List	Capacity Gallons	Height Inches	Diam. Inches	Price List	Boxing Net Extra
30	60	12	45.00	30	60	12	48.00	1.00
35	60½	13	50.00	35	60½	13	53.00	1.00
40	61	14	60.00	40	61	14	63.00	1.00
50	61	15½	75.00	50	61	15½	81.00	1.00
60	61	17½	90.00	60	61	17½	97.00	2.00
80	61½	19¼	120.00	80	61½	19¼	125.00	2.00
100	62	21½	160.00	100	62	21½	167.00	2.00

Before leaving the factory every Modern Boiler is guaranteed to have been hydraulically tested up to 200 pounds and we recommend it for use under a working pressure of not more than 85 pounds. The Wilhelmi Boiler is tested up to 250 pounds and recommended for use under a working pressure of not more than 106 pounds, which is 42½ per cent. of their guaranteed test as provided by law.

The initial test having proved these boilers perfect, they will continue in that state for years unless the supply pipe to boiler is obstructed with a check valve or pressure regulator, the use of which will not only damage the boiler but also endanger lives and property as well. Under these conditions we cannot be responsible for the boiler, nor for any loss that might ensue.

The Wilhelmi and Modern Boilers are guaranteed not to collapse.

Interior thoroughly tinned.

Boilers from 30 to 60 gallons are furnished with ¾-inch I.P. Male Couplings.

Boilers from 80 to 100 gallons are furnished with 1-inch I.P. Male Couplings.

No iron used in construction.

Fig. 10302

The Wilhelmi Copper Range Boiler
250 Pounds Test

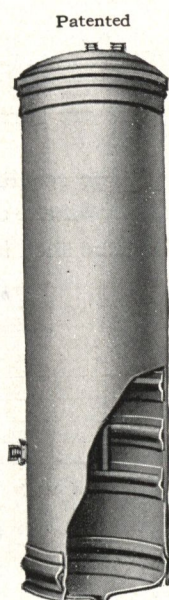


Fig. 10302
Wilhelmi

Galvanized Iron Range Boilers

Vertical

Standard, 85 pounds working pressure. Extra Heavy, 150 pounds working pressure



Fig. 10310
Riveted

Capacity Gallons

12
18
21
24
24
27
28
30
32
36
40
42
47
52
53
66
82
100
120
144
168
192
240

Figs. 10310-11

Actual Inner Diameter and Length of Shell

3 feet x 10 inches
3 feet x 12 inches
3½ feet x 12 inches
4 feet x 12 inches
3 feet x 14 inches
4½ feet x 12 inches
3½ feet x 14 inches
5 feet x 12 inches
4 feet x 14 inches
4½ feet x 14 inches
5 feet x 14 inches
4 feet x 16 inches
4½ feet x 16 inches
5 feet x 16 inches
4 feet x 18 inches
5 feet x 18 inches
5 feet x 20 inches
5 feet x 22 inches
5 feet x 24 inches
6 feet x 24 inches
7 feet x 24 inches
8 feet x 24 inches
10 feet x 24 inches

Price Galv'd

12.50
14.50
15.50
15.75
19.00
18.50
20.25
19.00
21.00
21.50
24.00
26.00
30.00
31.00
31.50
38.00
45.50
63.50
72.50
103.00
120.00
132.00
160.00

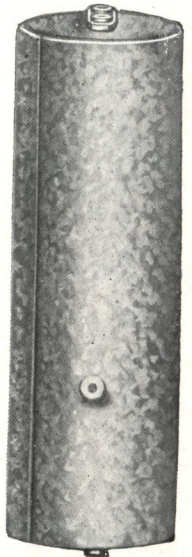


Fig. 10311
Electric Weld

Note: All Boilers have spuds tapped for 1-inch iron pipe unless otherwise ordered. For larger tapings net extra charge for each opening will be made as follows.

1¼-inch.....	.25
1½-inch.....	.25
2-inch.....	.50
2½-inch.....	1.00
3-inch.....	1.50
4-inch.....	2.00

Horizontal

Fig. 10312

Horizontal Range Boilers. Same sizes and prices as Vertical Boilers. Furnished Riveted or Electric Weld.

Note: When ordering horizontal boilers send sketch showing number and location of tapings, and also state whether right or left hand.

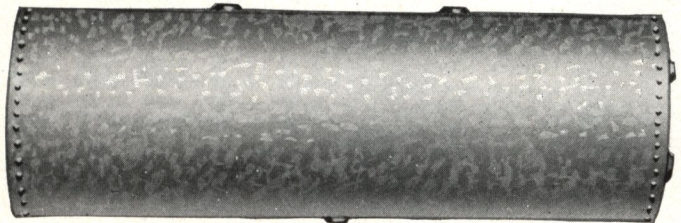


Fig. 10312

Galvanized Iron Barbers' Hot Water Boilers

Fig. 10313

Galvanized Barber Boiler

Capacity 5 gallons, size 9 x 20 inches.....	8.00
Capacity 8 gallons, size 10 x 20 inches.....	8.50
Capacity 10 gallons, size 12 x 20 inches.....	9.00
Capacity 12 gallons, size 14 x 20 inches.....	10.00

Fig. 10314

Galvanized Stands

9-inch.....	1.50
10-inch.....	1.50
12-inch.....	1.50
14-inch.....	2.00
Couplings and Gas Burner extra.	

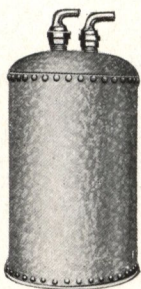


Fig. 10313
Boiler



Fig. 10314
Stand

Boiler Stands and Supports

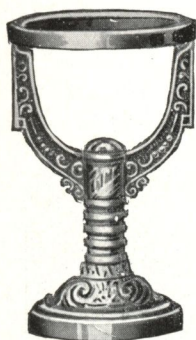


Fig. 10320
Improved Boiler
Stand

Fig. 10320

Improved Boiler Stands

Height, 21 inches

Size Ring.....	12	13	14	16	18	20	22	24
Plain.....	1.25	1.30	1.40	1.75	2.50	3.00	3.50	4.00
Galvanized.....	2.50	2.60	2.70	3.25	4.75	5.50	6.50	7.50

Extension Piece to raise Stand to 30 inches, Plain..... .50

Extension Piece to raise Stand to 30 inches, Galvanized..... .75

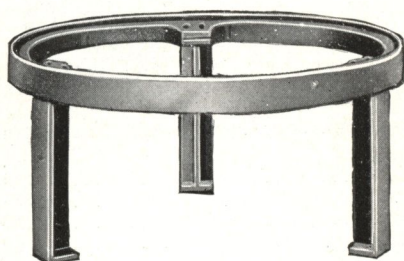


Fig. 10321

Vertical Tank Stand

Size, inches.....	10	12	14	16	18	20	22	24	30	36	42	48
Fig. 10321 Stand, Plain.....	.....	.....	.....	.....	.....	.....	.....	8.00	9.00	10.00	12.00	14.00
Fig. 10321 Stand, Galvanized...	.....	.....	.....	.....	.....	.....	.....	11.50	13.00	14.50	17.00	19.50
Fig. 10322 Hanger, Plain.....	3.50	3.50	3.50	4.00	4.00	5.50	5.50	6.00	8.00	10.00	12.00	.....
Fig. 10322 Hanger, Galvanized..	4.00	4.00	4.00	5.00	5.00	7.50	7.50	8.00	12.00	15.00	18.00	.....
Fig. 10323 Bracket, Plain.....	6.00	6.00	6.00	6.50	8.00	8.00	9.50	9.50	.....	.....	.....	.....
Fig. 10323 Bracket, Galvanized..	6.50	6.50	6.50	7.50	9.00	9.00	11.00	11.00	.....	.....	.....	.....

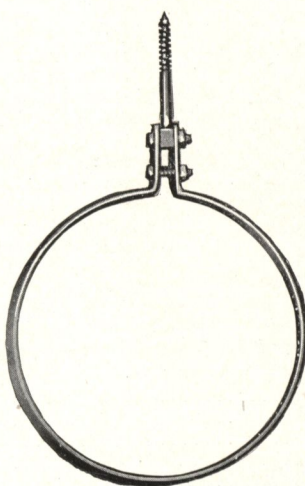


Fig. 10322

Tank Hanger

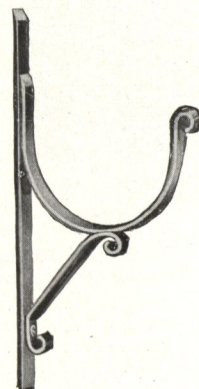


Fig. 10323

Tank Bracket

Range Boiler Couplings—Brass and Galvanized Iron

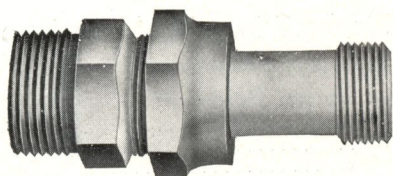


Fig. 10324

Straight Boiler Coupling

Iron Pipe

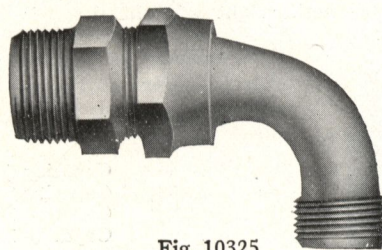


Fig. 10325

Bent Boiler Coupling

Figs. 10324-5

Brass Ground Joint Boiler Couplings, per set.....	2.50
Galvanized Iron Flat Face Boiler Couplings, per set.....	1.50

Set consists of 3 Bent and 1 Straight Coupling.

Lead Pipe

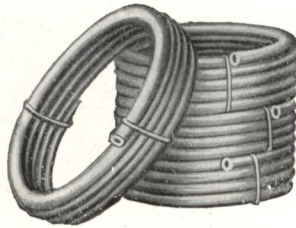


Fig. 10330

Table of Weights and Letters of Lead Pipe in Coils

I. D. Inch	Letter	Weight Per Foot		I. D. Inches	Letter	Weight Per Foot		I. D. Inches	Letter	Weight Per Foot	
		Pounds	Ounces			Pounds	Ounces			Pounds	Ounces
$\frac{3}{8}$	D	..	10	$\frac{5}{8}$	AA	2	12	$\frac{1}{4}$	AA	5	12
$\frac{3}{8}$	C	..	12	$\frac{5}{8}$	AAA	3	8	$\frac{1}{4}$	AAA	6	12
$\frac{3}{8}$	B	1	..	$\frac{3}{4}$	E	1	..	$\frac{1}{2}$	E	3	..
$\frac{3}{8}$	A	1	4	$\frac{3}{4}$	D	1	4	$\frac{1}{2}$	D	3	8
$\frac{3}{8}$	AA	1	8	$\frac{3}{4}$	C	1	12	$\frac{1}{2}$	C	4	4
$\frac{3}{8}$	AAA	1	12	$\frac{3}{4}$	Special	2	..	$\frac{1}{2}$	B	5	..
$\frac{7}{16}$	.....	..	13	$\frac{3}{4}$	B	2	4	$\frac{1}{2}$	A	6	8
$\frac{7}{16}$	.....	1	..	$\frac{3}{4}$	A	3	..	$\frac{1}{2}$	AA	7	8
$\frac{1}{2}$	E	..	9	$\frac{3}{4}$	AA	3	8	$\frac{1}{2}$	AAA	8	8
$\frac{1}{2}$	D	..	12	$\frac{3}{4}$	AAA	4	12	$\frac{3}{4}$	D	4	..
$\frac{1}{2}$	C	1	..	1	E	1	8	$\frac{3}{4}$	C	5	..
$\frac{1}{2}$	B	1	4	1	D	2	..	$\frac{3}{4}$	B	6	..
$\frac{1}{2}$	Special	1	8	1	C	2	8	$\frac{3}{4}$	A	7	..
$\frac{1}{2}$	A	1	12	1	B	3	4	$\frac{3}{4}$	AA	8	8
$\frac{1}{2}$	AA	2	..	1	A	4	..	$\frac{3}{4}$	AAA	10	..
$\frac{1}{2}$	Special	2	8	1	AA	4	12	2	D	4	12
$\frac{1}{2}$	AAA	3	..	1	AAA	6	..	2	C	6	..
$\frac{5}{8}$	E	..	12	$1\frac{1}{4}$	E	2	..	2	B	7	..
$\frac{5}{8}$	D	1	..	$1\frac{1}{4}$	D	2	8	2	A	8	..
$\frac{5}{8}$	C	1	8	$1\frac{1}{4}$	C	3	..	2	AA	9	..
$\frac{5}{8}$	B	2	..	$1\frac{1}{4}$	B	3	12	2	AAA	11	12
$\frac{5}{8}$	A	2	8	$1\frac{1}{4}$	A	4	12				

Lead Waste Pipe

Fig. 10331

Table of Weights of Lead Waste Pipe Made in 10-foot Lengths

I. D. Inch	Weight Per Foot Pounds	I. D. Inches	Weight Per Foot Pounds	I. D. Inches	Weight Per Foot Pounds
$1\frac{1}{2}$	2	3	5	$4\frac{1}{2}$	8
$1\frac{1}{2}$	3	3	6	$4\frac{1}{2}$	10
$1\frac{1}{2}$	$3\frac{1}{2}$	$3\frac{1}{2}$	5	5	8
2	3	$3\frac{1}{2}$	6	5	10
2	4	4	5	5	12
$2\frac{1}{2}$	4	4	6	$5\frac{1}{2}$	10
$2\frac{1}{2}$	5	4	8	6	12

Pure Block Tin Pipe

Fig. 10332

I. D. Inch	Weight Per Foot	I. D. Inches	Weight Per Foot
$\frac{1}{4}$	4 and 5 ounces	$\frac{3}{4}$	10 and 12 ounces.
$\frac{3}{8}$	4, $4\frac{1}{2}$, 5, 6, 7 and 8 ounces.	1	15 and 18 ounces.
$\frac{7}{16}$	5 ounces.	$\frac{1}{4}$	20 and 24 ounces.
$\frac{1}{2}$	6, 8, 10, 12 ounces	$1\frac{1}{2}$	2 and $2\frac{1}{2}$ pounds.
$\frac{5}{8}$	6, 8, 10, 12 ounces.	2	$2\frac{1}{2}$ and 3 pounds.

Prices on all of the above, market rates.

Sheet Lead

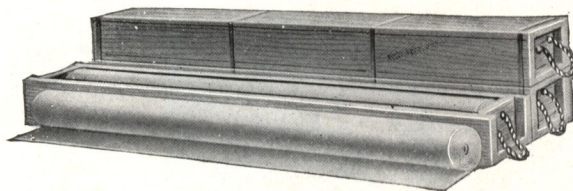


Fig. 10340

Weight Per Square Foot Pounds	Approximate Thickness Fraction of an Inch	Weight Per Square Foot Pounds	Approximate Thickness Fraction of an Inch
1	$\frac{1}{64}$	6	$\frac{3}{32}$
2	$\frac{1}{32}$	8	$\frac{1}{8}$ Full
$2\frac{1}{2}$	$\frac{1}{32}$ Full	10	$\frac{5}{32}$
3	$\frac{3}{64}$	12	$\frac{3}{16}$
4	$\frac{1}{16}$	15	$\frac{1}{4}$
5	$\frac{5}{64}$		

Note: Sheets cut to any size required.

We roll sheet lead to any weight per square foot desired and in any width up to 11 feet 6 inches, from 1 to 7 pounds, inclusive and from 8 pounds up, 12 feet wide.

Special attention given to dimension sheets for chemical purposes.

Half and Half Solder

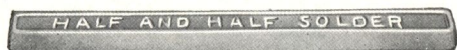


Fig. 10341

$1\frac{1}{2}$ Pounds per Bar

Wiping Solder

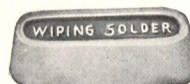


Fig. 10342

5 Pounds per Cake

Bar Tin



Fig. 10343

$1\frac{1}{2}$ Pounds per Bar

Ingot Calking Lead



Fig. 10344

5 and 25 Pounds per Cake

Pig Lead

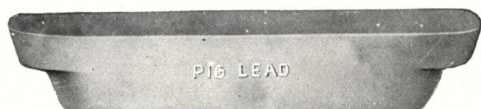


Fig. 10345

100 Pounds per Pig

Pig Tin



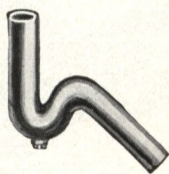
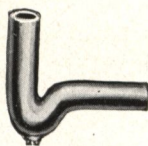
Fig. 10346

100 Pounds per Pig

Prices on all of the above, market rates.

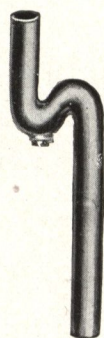
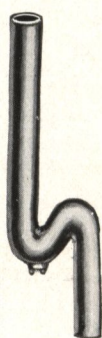
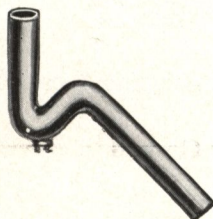
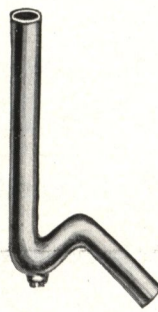
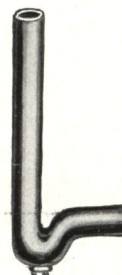
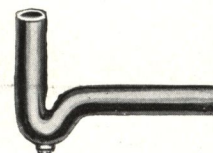
Drawn Lead Traps

Standard Lead Traps

Fig. 10350
Full S TrapFig. 10351
 $\frac{3}{4}$ S TrapFig. 10352
 $\frac{1}{2}$ S TrapFig. 10353
Running TrapFig. 10354
Running Y TrapFig. 10355
Bag Trap

Weight Per Foot Lbs.	Size Inches	Regular Full S	Vented Full S	Regular $\frac{3}{4}$ S	Vented $\frac{3}{4}$ S	Regular $\frac{1}{2}$ S	Vented $\frac{1}{2}$ S	Regular Running	Vented Running	Regular Running Y	Vented Running Y	Regular Bag	Vented Bag
1½	1¼	.58	1.38	.55	1.35	.51	1.31	.48	1.28	.52	1.32	.68	1.48
2	1¼	.73	1.53	.66	1.46	.64	1.44	.58	1.38	.65	1.45	.87	1.67
2½	1¼	.87	1.67	.81	1.61	.77	1.57	.70	1.50	.74	1.54	1.06	1.86
2¾	1½	.90	1.85	.81	1.76	.75	1.70	.72	1.67	.76	1.71	1.08	2.03
3	1½	1.03	1.98	.94	1.89	.87	1.82	.87	1.82	.94	1.89	1.28	2.23
3½	1½	1.25	2.20	1.15	2.10	1.09	2.04	1.03	1.98	1.09	2.04	1.54	2.49
3¾	2	1.38	2.33	1.30	2.25	1.20	2.15	1.13	2.08	1.34	2.29	1.73	2.68
4	2	1.65	2.60	1.53	2.48	1.42	2.37	1.32	2.27	1.45	2.40	2.08	3.03
4½	2	1.85	2.80	1.73	2.68	1.57	2.52	1.46	2.41	1.61	2.56	2.33	3.28
5	3	2.69	3.94	2.62	3.87	2.24	3.49	2.09	3.34	2.46	3.71	3.35	4.60
6	3	3.09	4.34	2.97	4.22	2.58	3.83	2.35	3.60	2.88	4.13	3.96	5.21
6	4	3.25	4.50	3.07	4.32	2.49	3.74	2.53	3.78	3.15	4.40	4.77	6.02
8	4	4.30	5.55	3.95	5.20	3.25	4.50	3.28	4.53	4.05	5.30	6.30	7.55
8	4½	5.00	....	4.90	....	4.02	....	3.95	....	4.92	....	6.85	....
10	4½	6.06	....	5.89	....	4.84	....	4.80	....	5.89	....	8.30	....

Extra Long Lead Traps

Fig. 10356
Extra Long Outlet
Full SFig. 10356A
Extra Long Inlet
Full SFig. 10357
Extra Long Outlet
 $\frac{3}{4}$ SFig. 10357A
Extra Long Inlet
 $\frac{3}{4}$ SFig. 10358
Extra Long Inlet
 $\frac{1}{2}$ SFig. 10359
Extra Long Outlet
 $\frac{1}{2}$ S

Weight Per Foot Pounds	Size Inches	Regular Full S	Vented Full S	Regular $\frac{3}{4}$ S	Vented $\frac{3}{4}$ S	Regular $\frac{1}{2}$ S	Vented $\frac{1}{2}$ S
1½	1¼	.93	1.73	.85	1.65	.76	1.56
2	1¼	1.19	1.99	1.04	1.84	.95	1.75
2½	1¼	1.44	2.24	1.28	2.08	1.14	1.94
2¾	1½	1.36	2.31	1.19	2.14	1.02	1.97
3	1½	1.64	2.59	1.43	2.38	1.22	2.17
3½	1½	1.95	2.90	1.72	2.67	1.50	2.45
3¾	2	2.00	2.95	1.76	2.71	1.55	2.50
4	2	2.40	3.35	2.08	3.03	1.83	2.78
4½	2	2.69	3.64	2.33	3.28	2.02	2.97

Note: 1¼-inch Traps have 1¼-inch Vent Connection.

1½-inch Traps have 1½ or 2-inch Vent Connections. If 2-inch Vent is desired add 30 cents to list.

Cudell Lead Traps With Ball

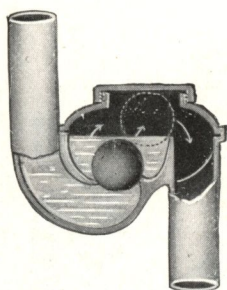


Fig. 10360

S Trap
Regular Pattern

Size Inlet, inches.....	.....
Size Outlet, inches.....	.....
Figs. 10360-1 With White Metal Cover, each.....	.....
Fig. 10362 With White Metal Cover, each.....	.....

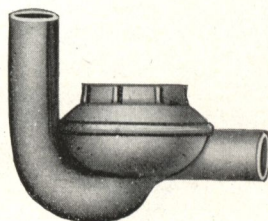


Fig. 10361

Half S Trap
Regular Pattern

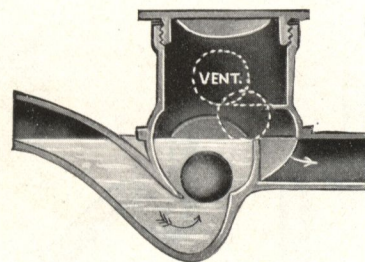


Fig. 10362

Running Trap with Bath Cover
and Vent Extension

1	1 1/4	1 1/4	1 1/2	1 1/2
1 1/4	1 1/4	1 1/2	1 1/2	2
2.00	2.00	2.50	2.50	2.70
2.50	2.50	3.00	3.00	3.20

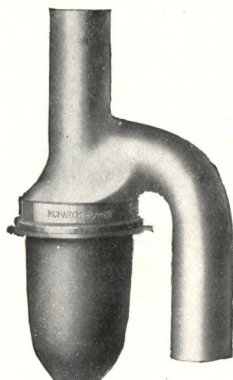


Fig. 10363

S Trap

Bowers Lead Traps Non-syphoning

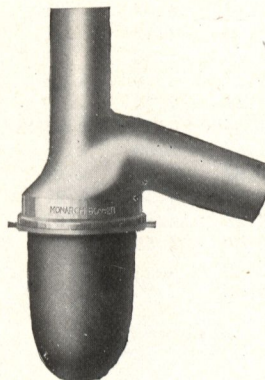


Fig. 10364

Half S Trap

Size, inches.....	1 1/4 x 1 1/4	1 1/4 x 1 1/2	1 1/2 x 1 1/2	1 1/2 x 2
Fig. 10363 Full S with Lead Cup.....	1.70	1.75	2.15	2.25
Fig. 10363 Full S with Glass Cup.....	1.50	1.55	1.90	2.00
Fig. 10364 Half S with Lead Cup.....	1.65	1.70	2.05	2.15
Fig. 10364 Half S with Glass Cup.....	1.45	1.50	1.80	1.90

Monarch Anti-Syphon and Resealing Lead Traps

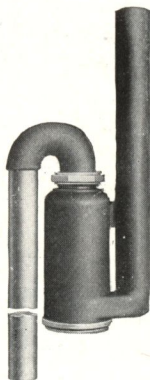


Fig. 10365

S Trap

Adjustable Brass Ground

Joint Outlet

Self-Scouring

Sanitary

Brass Outlet and

Clean-out

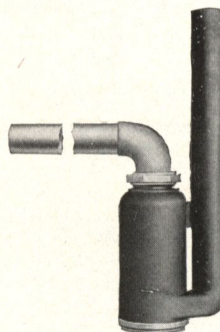


Fig. 10366

Half S Trap

Size, inches.....	1 1/4	1 1/2
Cast Lead S Trap.....	4.50	5.00
To Offset Outlet Vertical with Inlet, add to list.....	.50	.50

Size, inches.....	1 1/4	1 1/2
Cast Lead Half S Trap.....	4.00	4.50

Drawn Lead Bends

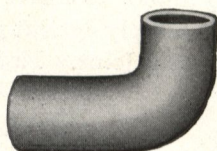


Fig. 10370

Short Lead Bend

Dimensions

- $1\frac{1}{4}$ -inch Center to Ends 6 inches, $3\frac{1}{2}$ inches.
 $1\frac{1}{2}$ -inch Center to Ends 7 inches, 4 inches.
 2-inch Center to Ends $7\frac{3}{4}$ inches, $3\frac{3}{4}$ inches.
 3-inch Center to Ends $8\frac{1}{4}$ inches, $4\frac{1}{4}$ inches.
 4-inch Center to Ends 10 inches, $5\frac{1}{2}$ inches.
 $4\frac{1}{2}$ -inch Center to Ends 11 inches, $6\frac{1}{4}$ inches.

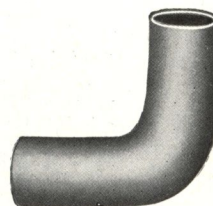


Fig. 10371

Long Lead Bend

Dimensions

- $1\frac{1}{4}$ -inch Center to Ends 6 inches.
 $1\frac{1}{2}$ -inch Center to Ends 7 inches.
 2-inch Center to Ends $7\frac{3}{4}$ inches.
 3-inch Center to Ends $8\frac{1}{4}$ inches.
 4-inch Center to Ends 10 inches.
 $4\frac{1}{2}$ -inch Center to Ends 11 inches.

Size, inches.....	Standard						Extra Heavy					
	$1\frac{1}{4}$	$1\frac{1}{2}$	2	3	4	$4\frac{1}{2}$	$1\frac{1}{4}$	$1\frac{1}{2}$	2	3	4	$4\frac{1}{2}$
Weight of Lead per foot, pounds.....	$1\frac{1}{2}$	$2\frac{1}{4}$	$3\frac{1}{4}$	5	6	8	$2\frac{1}{2}$	$3\frac{1}{2}$	$4\frac{1}{2}$	6	8	10
Fig. 10370 Short.....	.25	.38	.57	1.09	1.50	2.55	.34	.62	.80	1.21	1.84	2.90
Fig. 10371 Long.....	.30	.50	.78	1.39	1.95	2.98	.50	.79	1.05	1.60	2.40	3.68

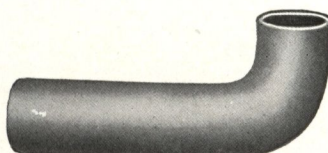


Fig. 10372

Extension Bend

Size, inches.....	Standard					Extra Heavy				
	$1\frac{1}{4}$	$1\frac{1}{2}$	2	3	4	$1\frac{1}{4}$	$1\frac{1}{2}$	2	3	4
Weight of Lead per Foot, pounds.....	$1\frac{1}{2}$	$2\frac{1}{4}$	$3\frac{1}{4}$	5	6	$2\frac{1}{2}$	$3\frac{1}{2}$	$4\frac{1}{2}$	6	8
Short, Inlet End x 12 inches on Outlet.....	.40	.56	.79	1.39	1.70	.60	.90	1.08	1.57	2.09
Short, Inlet End x 15 inches on Outlet.....	.47	.67	.94	1.65	2.00	.72	1.07	1.28	1.87	2.45
Short, Inlet End x 18 inches on Outlet.....	.55	.77	1.09	1.90	2.30	.84	1.24	1.49	2.16	2.81
Short, Inlet End x 20 inches on Outlet.....	.60	.84	1.19	2.07	2.48	.92	1.35	1.63	2.35	3.04
Long, Inlet End x 12 inches on Outlet.....	.46	.67	.99	1.73	2.15	.70	1.07	1.35	1.96	2.62
Long, Inlet End x 15 inches on Outlet.....	.54	.77	1.14	1.99	2.44	.82	1.24	1.56	2.25	2.98
Long, Inlet End x 18 inches on Outlet.....	.62	.88	1.29	2.24	2.73	.94	1.41	1.76	2.54	3.34
Long, Inlet End x 20 inches on Outlet.....	.67	.95	1.39	2.42	2.92	1.02	1.52	1.90	2.74	3.58
For each inch of excess length over listed size add to the list of nearest listed size...	.03 $\frac{1}{4}$	.04 $\frac{1}{2}$	.06 $\frac{1}{4}$	.10 $\frac{3}{4}$	.12	.05	.07	.8 $\frac{1}{2}$	.12	.15

Short Inlet Ends are same length as Inlets on Short Bends of corresponding size.

Long Inlet Ends are the same as on Long Bends.

Sisson Insertable Joint

Fig. 10380

The Sisson Insertable Joint enables the plumber to insert a fitting in a soil line already installed at very little expense. Simply cut out pipe the length of fitting desired and 11½ inches for the Sisson Joint. Not necessary to spring stack or disturb pipe.

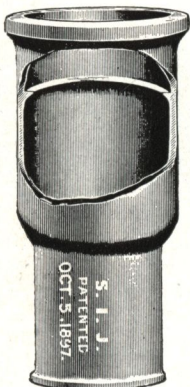


Fig. 10380

	Standard	Extra Heavy
Size 2-inch, each.....	1.40	1.50
Size 3-inch, each.....	1.50	1.70
Size 4-inch, each.....	1.80	2.00
Size 5-inch, each.....	2.10	2.30
Size 6-inch, each.....	2.60	2.80
Size 8-inch, each.....	....	10.00

Lead Ring furnished with each Joint.

Combination Ferrules

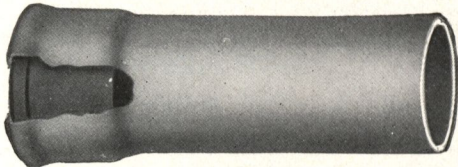


Fig. 10381

Lead and Iron

Standard														
Length, inches.....	4	4½	5	6	8	10	12	14	16	18	20	24	30	36
1¼-inch for 2-inch C. I. P.....	28	.36	.43	.51	.60	.67	....	....	....	....	....	....	....	....
1½-inch for 2-inch C. I. P.....	28	.36	.43	.51	.60	.67	.80	.90	1.00	1.10	1.30	....	....	....
2-inch for 2-inch C. I. P.....	.28	41	.46	.57	.67	.76	.80	.86	.92	1.00	1.15	1.40	1.65	....
3-inch for 3-inch C. I. P.....	.42	60	.67	.82	.98	1.10	1.15	1.22	1.30	1.40	1.60	2.00	2.30	....
4-inch for 4-inch C. I. P.....	.50	72	.85	1.02	1.25	1.40	1.60	1.73	1.85	2.10	2.30	2.75	3.25	....
Extra Heavy														
Length, inches.....	4	4½	5	6	8	10	12	14	16	18	20	24	30	36
1½-inch for 2-inch C. I. P.....	38	.44	.52	.61	.72	.80	1.15	1.30	1.45	1.60	1.90	....	....	....
2-inch for 2-inch C. I. P.....	.42	49	.54	.67	.81	.93	1.10	1.23	1.36	1.49	1.75	2.20	2.60	....
3-inch for 3-inch C. I. P.....	.55	75	.84	1.00	1.18	1.35	1.46	1.63	1.80	1.97	2.33	2.90	3.40	....
4-inch for 4-inch C. I. P.....	.70	84	.94	1.23	1.45	1.67	2.00	2.21	2.45	2.70	3.16	3.76	4.36	....

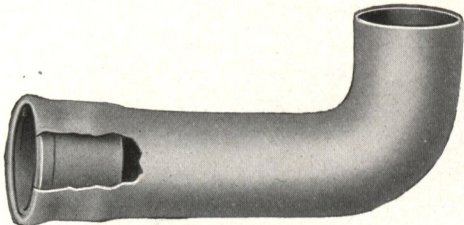


Fig. 10382

Combination Bends and Ferrules—Lead and Iron

Length of Outlet End, inches.....	12	13	14	15	16	17	18	19	20
4-inch, Short Inlet (5½-inch Inlet) Standard.....	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	3.00
4-inch, Long Inlet (9¾-inch Inlet) Standard.....	2.65	2.75	2.85	2.94	3.04	3.14	3.23	3.33	3.42
4-inch, Short Inlet (5½-inch Inlet) Extra Heavy.....	2.59	2.71	2.83	2.95	3.07	3.19	3.31	3.43	3.54
4-inch, Long Inlet (9¾-inch Inlet) Extra Heavy.....	3.12	3.24	3.36	3.48	3.60	3.72	3.84	3.96	4.08

Lead Drum Traps



Fig. 10390—No. 1



Fig. 10391—No. 2

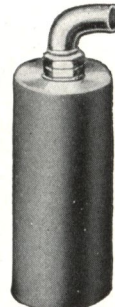


Fig. 10392—No. 3



Fig. 10393—No. 4

Regular Pattern

Sizes	Fig. 10390 No. 1		Fig. 10391 No. 2		Fig. 10392 No. 3		Fig. 10393 No. 4	
	Standard	Ex. Heavy	Standard	Ex. Heavy	Standard	Ex. Heavy	Standard	Ex. Heavy
Size 4 x 8-inch, Screws Ordinary Finish.....	1.90	2.40	2.60	3.10	3.00	3.50	3.00	3.50
Size 4 x 9-inch, Screws Ordinary Finish.....	2.02	2.50	2.72	3.20	3.12	3.60	3.12	3.60
Size 4 x 10-inch, Screws Ordinary Finish.....	2.10	2.63	2.80	3.33	3.20	3.73	3.20	3.73
Size 4 x 11-inch, Screws Ordinary Finish.....	2.18	2.75	2.88	3.45	3.28	3.85	3.28	3.85
Size 4 x 12-inch, Screws Ordinary Finish.....	2.25	2.90	2.95	3.60	3.35	4.00	3.35	4.00
Size 4 x 14-inch, Screws Ordinary Finish.....	2.55	3.30	3.25	4.00	3.65	4.40	3.65	4.40
Size 5 x 10-inch, Screws Ordinary Finish.....	3.00	3.40	3.70	4.10	4.10	4.50	4.10	4.50
Size 5 x 11-inch, Screws Ordinary Finish.....	3.15	3.55	3.85	4.25	4.25	4.65	4.25	4.65
Size 5 x 12-inch, Screws Ordinary Finish.....	3.30	3.70	4.00	4.40	4.40	4.80	4.40	4.80
Size 6 x 10-inch, Screws Ordinary Finish.....	3.55	4.15	4.25	4.85	4.65	5.25	4.65	5.25
Size 6 x 11-inch, Screws Ordinary Finish.....	3.75	4.35	4.45	5.05	4.85	5.45	4.85	5.45
Size 6 x 12-inch, Screws Ordinary Finish.....	3.90	4.60	4.60	5.30	5.00	5.70	5.00	5.70
For Polished or Nickel-plated Screws, add.....	.20	.20	.30	.30	.30	.30	.30	.30

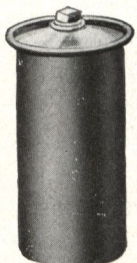


Fig. 10394—No. 5

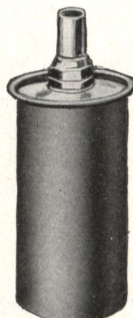


Fig. 10395—No. 6



Fig. 10396—No. 7

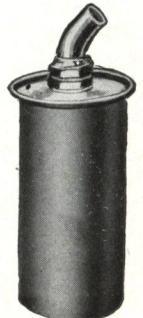


Fig. 10397—No. 8

With Extended Flanges

Sizes	Fig. 10394 No. 5		Fig. 10395 No. 6		Fig. 10396 No. 7		Fig. 10397 No. 8	
	Standard	Ex. Heavy	Standard	Ex. Heavy	Standard	Ex. Heavy	Standard	Ex. Heavy
Size 4 x 8-inch, Screws Ordinary Finish.....	2.00	2.50	2.80	3.30	3.20	3.70	3.20	3.70
Size 4 x 9-inch, Screws Ordinary Finish.....	2.12	2.60	2.92	3.40	3.32	3.80	3.32	3.80
Size 4 x 10-inch, Screws Ordinary Finish.....	2.20	2.73	3.00	3.53	3.40	3.93	3.40	3.93
Size 4 x 11-inch, Screws Ordinary Finish.....	2.28	2.85	3.08	3.65	3.48	4.05	3.48	4.05
Size 4 x 12-inch, Screws Ordinary Finish.....	2.35	3.00	3.15	3.80	3.55	4.20	3.55	4.20
Size 4 x 14-inch, Screws Ordinary Finish.....	2.65	3.40	3.45	4.20	3.85	4.60	3.85	4.60
Size 5 x 10-inch, Screws Ordinary Finish.....	3.10	3.50	3.90	4.30	4.30	4.70	4.30	4.70
Size 5 x 11-inch, Screws Ordinary Finish.....	3.25	3.65	4.05	4.45	4.45	4.85	4.45	4.85
Size 5 x 12-inch, Screws Ordinary Finish.....	3.40	3.80	4.20	4.60	4.60	5.00	4.60	5.00
Size 6 x 10-inch, Screws Ordinary Finish.....	3.65	4.25	4.45	5.05	4.85	5.45	4.85	5.45
Size 6 x 11-inch, Screws Ordinary Finish.....	3.85	4.45	4.65	5.25	5.05	5.65	5.05	5.65
Size 6 x 12-inch, Screws Ordinary Finish.....	4.00	4.70	4.80	5.50	5.20	5.90	5.20	5.90
For Polished or Nickel-plated Screws, add.....	.20	.20	.30	.30	.30	.30	.30	.30

Weight per Running Foot of Drum Traps

4-inch Standard, 5 pounds per foot. 5-inch Standard, 8 1/4 pounds per foot. 6-inch Standard, 10 pounds per foot.
 4-inch Extra Heavy, 8 pounds per foot. 5-inch Extra Heavy, 10 pounds per foot. 6-inch Extra Heavy, 13 pounds per foot.

Recess Caps same price as those shown with square, viz. Nos. 1 and 5.

Adjustable Roof Flanges

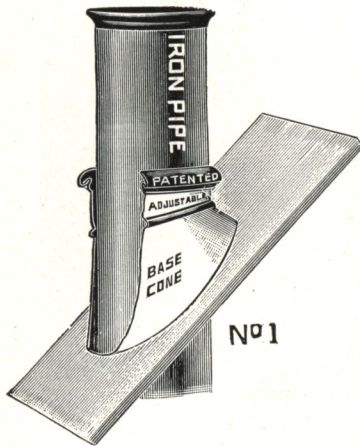


Fig. 10400

McGuire Adjustable
Roof Flange

Fig. 10400

The No. 1 Flange is made to adjust from one-half to one-fourth pitch.

Fig. 10401

The No. 2 Flange is made to adjust from one-third pitch to flat.

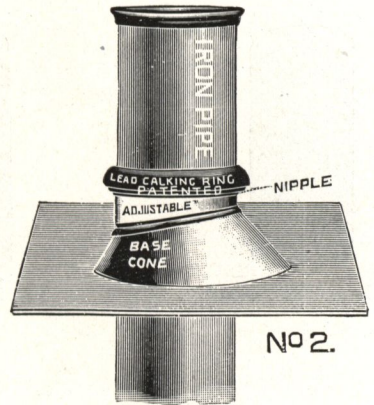


Fig. 10401

Figs. 10400-1

Size, inches.....	1¼	1½	2	3	4	5	6
No. 1-2 Galvanized Iron, per dozen.....	8.00	8.00	10.00	11.00	12.00	17.00	30.00
No. 1-2 Copper, per dozen.....	15.00	15.00	17.00	19.00	20.00	27.00	40.00

Bullard Adjustable Roof Flange

Adjusts from flat to extreme roof pitches and all intermediate adjustments. Made of steel or copper with lead collar.

Figs. 10402-3

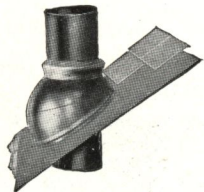


Fig. 10402

Size, inches.....	1¼	1½	2	3
Galvanized Steel, per dozen.....	8.00	8.00	10.00	11.00
Copper, per dozen.....	15.00	15.00	17.00	19.00
Sizes, inches.....	4	5	6	
Galvanized Steel, per dozen.....	12.00	17.00	30.00	
Copper, per dozen.....	20.00	27.00	40.00	

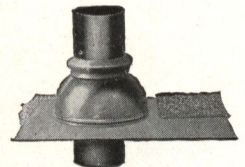


Fig. 10403

Fresh Air Inlets

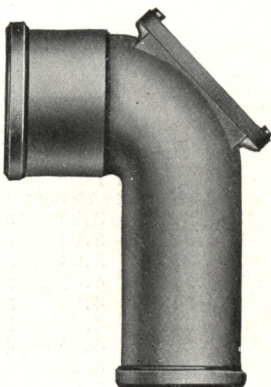


Fig. 10405

Acme Fresh Air Inlet
Quarter Bend Type

Size, inches.....	4	5	6	7
Each.....	5.60	8.90	12.00	16.00
Size, inches.....	8	10	12	
Each.....	18.00	22.00	28.00	

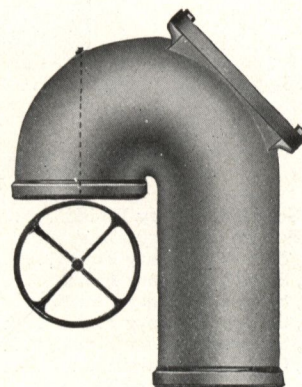


Fig. 10406

Acme Fresh Air Inlet
Return Bend Type

Size, inches.....	4	5	6	8
Each.....	5.60	8.90	12.10	18.00

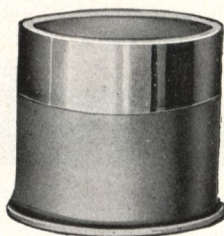


Fig. 10410
Straight

Size, inches.....	2	3	4	5	6	7	8	10
Fig. 10410 Standard, each....	.30	.64	.84	1.96	2.40	3.80	.....	.....
Fig. 10410 Extra Heavy, each	.44	.80	1.28	2.30	2.60	....	7.00	10.00



Fig. 10411
Reducing

Size, inches.....	2 x 1 $\frac{1}{4}$	2 x 1 $\frac{1}{2}$
Fig. 10411 Standard...	.44	.48
Fig. 10411 Ex. Heavy..	.56	.56

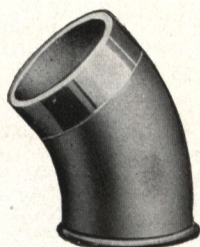


Fig. 10412
Eighth Bend

Size, inches.....	2	3	4
Fig. 10412 Standard, each.....	.80	1.30	1.90
Fig. 10412 Extra Heavy, each.....	1.12	1.64	2.30

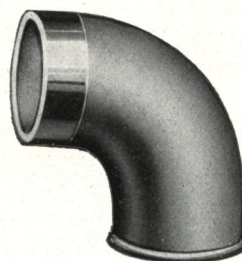


Fig. 10413
Quarter Bend

Size, inches.....	2	4
Fig. 10413 Standard, each.....	1.12	3.20
Fig. 10413 Extra Heavy, each.....	1.30	3.70



Fig. 10414
Straight with Hub

Size, inches.....	2	3	4
Standard, each.....	.45	.66	1.12
Extra Heavy, each..	.56	1.00	1.60

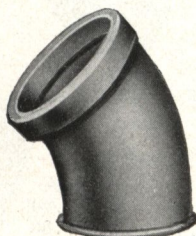


Fig. 10415
Eighth Bend with Hub

Size, inches.....	2	3*	4
Standard, each....	1.00	1.20	2.10
Extra Heavy, each.	1.20	1.70	2.60

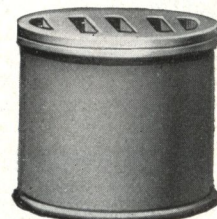


Fig. 10416
Straight with Strainer

Size, inches	2	3	4
Standard, each . . .	.90	1.20	1.50
Extra Heavy, each	1.10	1.50	2.00

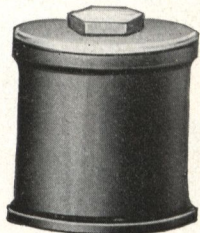


Fig. 10417
Iron Body with Brass Plug

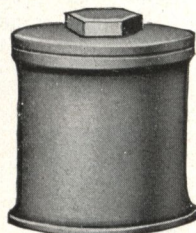


Fig. 10418
Brass Body with Brass Plug

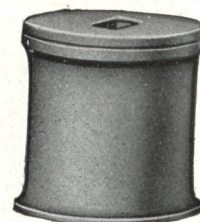


Fig. 10419
Brass Body with Countersunk
Brass Cap

Size, inches.....		Brass Cap							
		2	3	4	5	6	8	10	12
Fig. 10417	Standard, each.....	.30	.40	.50	.90	1.20			
Fig. 10417	Extra Heavy, each.....	.38	.52	.64	1.40	1.90	5.34	10.00	14.00
Fig. 10418	Standard, each.....	.68							
Fig. 10418	Extra Heavy, each.....	.96	1.00	1.26	1.80	3.40			
Fig. 10419	Standard, prices on application.		1.64	2.40	3.80	5.00	11.00	15.00	24.00
Fig. 10419	Extra Heavy, prices on application.								

Cast Iron Soil Pipe and Fittings

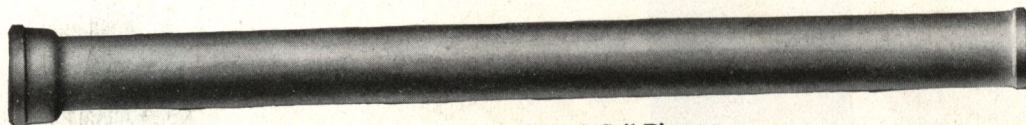


Fig. 10420. Single Hub Soil Pipe

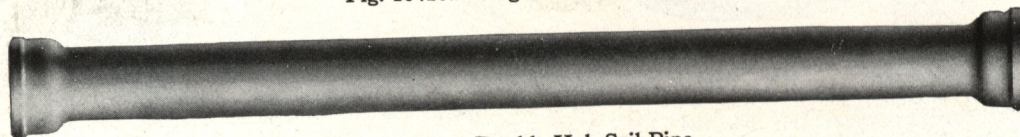
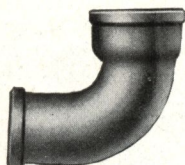
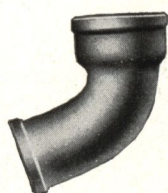
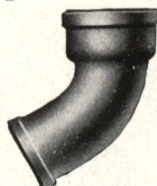
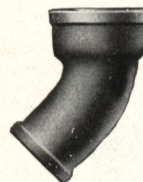
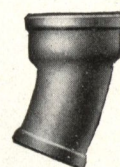


Fig. 10421. Double Hub Soil Pipe

	Standard									
Sizes, inches	2	3	4	5	6	7	8	10	12	15
Fig. 10420 Single Hub Pipe, per 5-foot length	1.30	1.75	2.30	2.90	3.50	7.00	7.00	12.00	15.00	28.00
Fig. 10421 Double Hub Pipe, per 5-foot length	1.40	1.85	2.40	3.10	3.70	8.00	8.00	13.00	16.00	29.00
Average weight per 5-foot length, pounds	17½	22½	32½	42	52	75	85	115	165	225

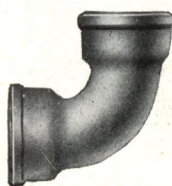
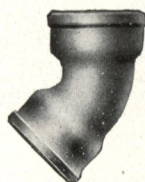
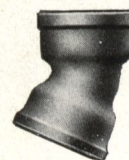
	Extra Heavy									
Sizes, inches	2	3	4	5	6	7	8	10	12	15
Fig. 10420 Single Hub Pipe, per 5-foot length	2.00	3.10	4.20	5.50	6.50	11.00	11.00	18.00	22.00	40.00
Fig. 10421 Double Hub Pipe, per 5-foot length	2.10	3.25	4.40	5.70	6.80	12.00	12.00	19.00	23.00	42.00
Average weight per 5-foot length, pounds	27½	47½	65	85	100	135	170	225	270	375

Soil Pipe Bends

Fig. 10422
¼ BendFig. 10423
⅛ BendFig. 10424
⅛ BendFig. 10425
⅛ BendFig. 10426
1/16 Bend

	Standard									
Sizes	2	3	4	5	6	7	8	10	12	15
Fig. 10422 ¼ Bends	.40	.55	.70	1.05	1.30	4.20	4.00	5.90	8.65	16.80
Fig. 10423 ⅛ Bends	.45	.80	.80	1.05	1.30	4.20	4.00	5.90	8.65	16.80
Fig. 10424 ⅛ Bends	.40	.60	.60	1.05	1.30	4.20	4.00	5.90	8.65	16.80
Fig. 10425 ⅛ Bends	.35	.45	.60	.80	1.05	4.20	4.00	5.90	8.65	16.80
Fig. 10426 1/16 Bends	.35	.50	.60	.80	1.00	4.20	4.00	5.90	8.65	16.80

	Extra Heavy									
Sizes	2	3	4	5	6	7	8	10	12	15
Fig. 10422 ¼ Bends	.55	.70	.85	1.25	1.55	5.60	5.00	6.50	10.80	21.00
Fig. 10423 ⅛ Bends	.60	1.00	1.00	1.25	1.55	5.60	5.00	6.50	10.80	21.00
Fig. 10424 ⅛ Bends	.45	.75	.75	1.25	1.55	5.60	5.00	6.50	10.80	21.00
Fig. 10425 ⅛ Bends	.40	.55	.75	1.00	1.25	5.60	5.00	6.50	10.80	21.00
Fig. 10426 1/16 Bends	.40	.70	.70	1.00	1.25	5.60	5.00	6.50	10.80	21.00

Fig. 10427
Double Hub ¼ BendFig. 10428
Double Hub ⅛ BendFig. 10429
Double Hub 1/16 Bend

	Standard					Extra Heavy				
Sizes	2	3	4	5	6	2	3	4	5	6
Fig. 10427 Double Hub ¼ Bends	.75	.95	1.20	1.85	2.45	.90	1.15	1.40	2.30	3.05
Fig. 10428 Double Hub ⅛ Bends	.75	.95	1.20	1.85	2.45	.90	1.15	1.40	2.30	3.05
Fig. 10429 Double Hub 1/16 Bends	.75	.95	1.20	1.85	2.45	.90	1.15	1.40	2.30	3.05

Cast Iron Soil Pipe Fittings

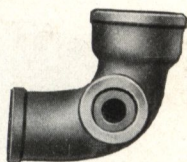


Fig. 10430

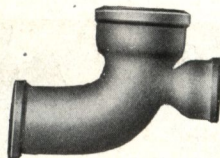
 $\frac{1}{4}$ Bend, with Side Inlet

Fig. 10431

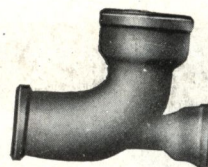
 $\frac{1}{4}$ Bend, with High Heel Inlet

Fig. 10432

 $\frac{1}{4}$ Bend, with Low Heel Inlet

Sizes.....

	Standard						Extra Heavy					
	2	3	4	5	6		2	3	4	5	6	
$\frac{1}{4}$ Bend with 2-inch Side or Heel Inlet.....	1.25	1.25	1.25	3.70	4.30		1.55	1.55	1.55	4.60	5.40	
$\frac{1}{4}$ Bend with 3-inch Side or Heel Inlet.....		1.25	3.10	3.70	4.30			1.55	3.85	4.60	5.40	
$\frac{1}{4}$ Bend with 4-inch Side or Heel Inlet.....			3.10	3.70	4.30				3.85	4.60	5.40	

When ordering Side Inlet Bends, specify if Right or Left Hand.

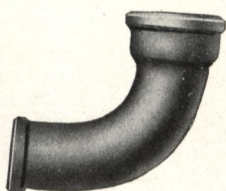


Fig. 10433

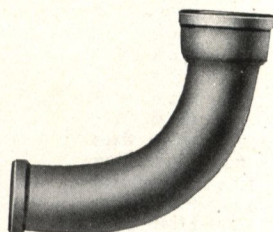
Short Sweep $\frac{1}{4}$ Bend

Fig. 10434

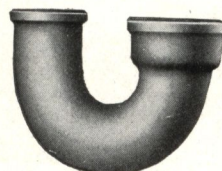
Long Sweep $\frac{1}{4}$ Bend

Fig. 10435

S. H. Return Bend

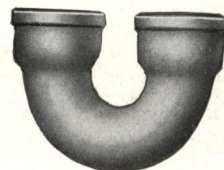


Fig. 10436

D. H. Return Bend

Sizes.....

	Standard						Extra Heavy					
	2	3	4	5	6		2	3	4	5	6	
Fig. 10433 Short Sweep $\frac{1}{4}$ Bend.....	.60	.90	1.15	1.55	2.50		.75	1.10	1.40	1.85	3.10	
Fig. 10434 Long Sweep $\frac{1}{4}$ Bend.....	.75	.95	1.25	1.70	2.75		.90	1.15	1.55	2.00	3.40	
Fig. 10435 Single Hub Return Bend.....	1.25	1.50	1.70	2.45	3.10		1.55	1.85	2.00	3.05	3.85	
Fig. 10436 Double Hub Return Bend.....	1.35	1.60	1.75	2.75	3.40		1.70	2.00	2.20	3.40	4.25	



Fig. 10437

Long $\frac{1}{4}$ Bend

Figs. 10437-38

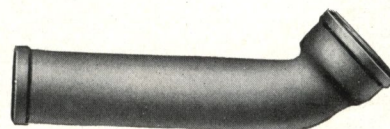


Fig. 10438

Long $\frac{1}{8}$ Bend

Sizes.....

	Standard						Extra Heavy					
	2	3	4	5	6	8	2	3	4	5	6	8
Long $\frac{1}{4}$ and $\frac{1}{8}$ Bends, 12 inches in Clear.....	.90	1.50	1.25	3.70	4.30	....	1.10	1.85	1.55	4.60	5.40	....
Long $\frac{1}{4}$ and $\frac{1}{8}$ Bends, 18 inches in Clear.....	1.05	1.85	1.50	4.30	5.00	7.50	1.30	2.30	1.85	5.40	6.15	10.00
Long $\frac{1}{4}$ and $\frac{1}{8}$ Bends, 24 inches in Clear.....	1.50	2.25	2.75	4.90	5.50	....	1.85	2.75	3.40	6.15	6.90	....

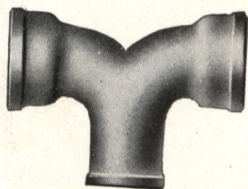


Fig. 10439

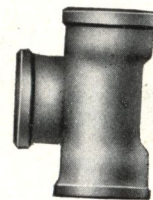
Double $\frac{1}{4}$ Bend

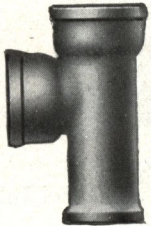
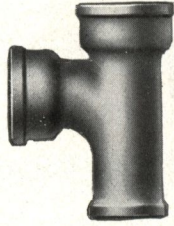
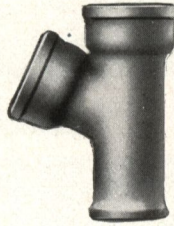
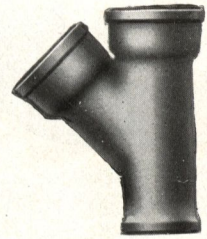
Fig. 10439A

T Branch, all Hub Ends

	Standard	Extra Heavy
Size 2 x 2 inches.....	1.50	1.85
Size 3 x 2 inches.....	2.45	3.05
Size 3 x 3 inches.....	2.55	3.20
Size 4 x 2 inches.....	2.80	3.45
Size 4 x 3 inches.....	2.80	3.45
Size 4 x 4 inches.....	2.80	3.45

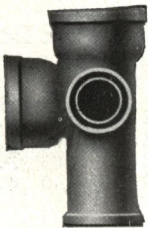
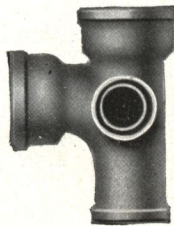
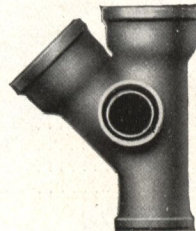
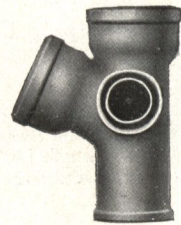
	Standard	Extra Heavy
Size 2 x 2 inches.....	2.25	2.75
Size 3 x 3 inches.....	3.45	4.30
Size 4 x 4 inches.....	4.65	5.85
Size 5 x 5 inches.....	5.65	7.05
Size 6 x 6 inches.....	7.35	9.20

Cast Iron Soil Pipe Fittings

Fig. 10440
T BranchFig. 10441
Sanitary T BranchFig. 10442
Y BranchFig. 10443
Half Y Branch

Figs. 10440-1-2-3

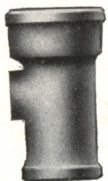
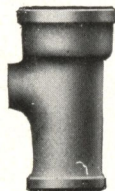
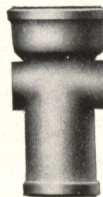
Sizes	Standard	Extra Heavy	Sizes	Standard	Extra Heavy
2 x 2	.55	.75	6 x 2	1.80	2.15
3 x 2	.75	.90	6 x 3	1.80	2.15
3 x 3	.85	1.10	6 x 4	1.80	2.15
4 x 2	.85	1.10	6 x 5	2.00	2.45
4 x 3	1.00	1.25	6 x 6	2.00	2.45
4 x 4	1.15	1.40	7 and Red. sizes	7.00	9.80
5 x 2	1.20	1.45	8 and Red. sizes	6.00	9.00
5 x 3	1.25	1.55	10 and Red. sizes	10.80	15.10
5 x 4	1.40	1.70	12 and Red. sizes	15.10	19.40
5 x 5	1.65	2.00	15 and Red. sizes	33.60	42.00

Fig. 10440A
T Branch
with Side InletFig. 10441A
Sanitary T Branch
with Side InletFig. 10442A
Y Branch
with Side InletFig. 10443A
Half Y Branch
with Side Inlet

Add to above list prices for Side Inlets.

For 2-inch Inlet.....	1.00
For 3-inch Inlet.....	1.25
For 4-inch Inlet.....	1.50
For 5-inch Inlet.....	2.00
For 6-inch Inlet.....	2.50

When ordering any of the above Side Inlet Fittings specify if Right or Left Hand.

Fig. 10444
Tapped T BranchFig. 10445
Tapped San. T BranchFig. 10446
Tapped Cross
StandardFig. 10447
Tapped San. Cross
Extra Heavy

Sizes	2	3	4	5	6	2	3	4	5	6
Fig. 10444 Tapped T Branch.....	.70	.85	1.00	1.60	2.50	.85	1.10	1.25	2.00	3.10
Fig. 10445 Tapped Sanitary T Branch.....	.75	.95	1.25	1.85	2.95	.90	1.10	1.55	2.30	3.70
Fig. 10446 Tapped Cross.....	1.15	1.25	1.40	2.25	3.45	1.40	1.55	1.70	2.80	4.30
Fig. 10447 Tapped Sanitary Cross.....	1.25	1.50	1.75	2.75	4.10	1.55	1.85	2.15	3.40	5.10

Tapped for 1¼, 1½ and 2-inch Iron Pipe.

Cast Iron Soil Pipe Fittings

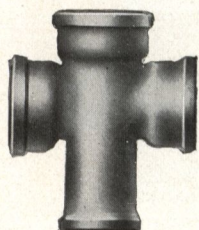
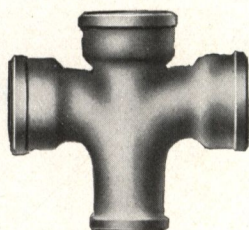
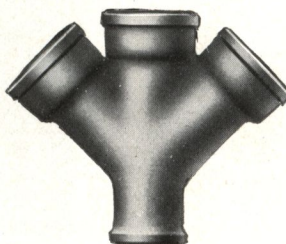
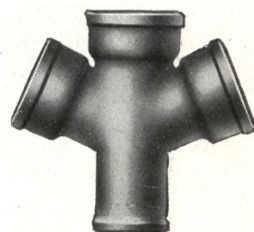
Fig. 10450
CrossFig. 10451
Sanitary CrossFig. 10452
Double Y BranchFig. 10453
Double Half Y Branch

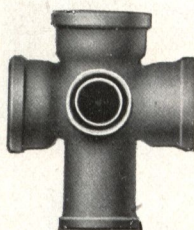
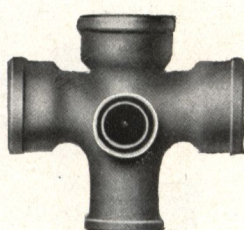
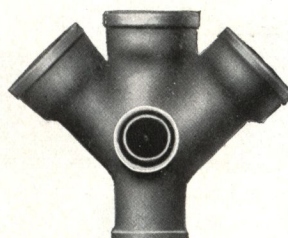
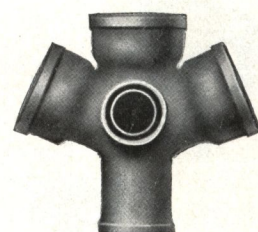
Fig. 10450-1-2-3

Sizes	Standard
2 x 2	1.25
3 x 2	1.65
3 x 3	1.65
4 x 2	1.80
4 x 3	1.80
4 x 4	1.80
5 x 2	4.95
5 x 3	4.95
5 x 4	4.95
5 x 5	4.95

Extra Heavy
1.55
2.00
2.00
2.15
2.15
2.15
6.15
6.15
6.15
6.15

Sizes
6 x 2
6 x 3
6 x 4
6 x 5
6 x 6
7 x 7
8 x 8
10 x 10
12 x 10
....

Standard	Extra Heavy
6.15	7.70
6.15	7.70
6.15	7.70
6.15	7.70
6.15	7.70
10.50	14.70
9.00	13.50
16.20	22.65
22.70	29.15
....	

Fig. 10450A
Cross with Side InletFig. 10451A
Sanitary Cross with Side InletFig. 10452A
Double Y Branch with Side InletFig. 10453A
Double Half Y Branch with Side Inlet

Add to above list prices for Side Inlets:

For 2-inch Inlet.....	1.00
For 3-inch Inlet.....	1.25
For 4-inch Inlet.....	1.50
For 5-inch Inlet.....	2.00
For 6-inch Inlet.....	2.50

When ordering any of the above Side Inlet Fittings specify if right or left hand.



Fig. 10454

Plug	Standard	Extra Heavy
Size 2 inches.....	.25	.30
Size 3 inches.....	.40	.40
Size 4 inches.....	.45	.60
Size 5 inches.....	.60	.75
Size 6 inches.....	.75	.90
Size 7 inches.....	1.30	1.75
Size 8 inches.....	1.20	1.50
Size 10 inches.....	2.15	3.25
Size 12 inches.....	3.25	4.30



Fig. 10455

Roof Iron

	Standard	Extra Heavy
Size 2 inches.....	.95	1.20
Size 3 inches.....	.95	1.20
Size 4 inches.....	1.05	1.25
Size 5 inches.....	1.25	1.50
Size 6 inches.....	1.55	1.80

Cast Iron Soil Pipe Fittings

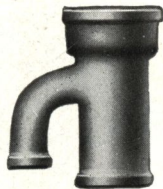


Fig. 10460

Vent Branch

Sizes	Standard	Extra Heavy
2 x 2	.90	1.10
3 x 2	1.15	1.40
3 x 3	1.15	1.40
4 x 2	1.15	1.40
4 x 3	1.40	1.85
4 x 4	1.40	1.85
5 x 2	4.35	5.40
5 x 3	4.35	5.40
5 x 4	4.35	5.40
5 x 5	4.35	5.40
6 x 2	6.15	7.70
6 x 3	6.15	7.70
6 x 4	6.15	7.70
6 x 5	6.15	7.70
6 x 6	6.15	7.70

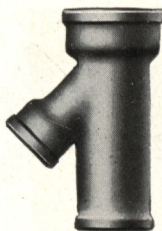


Fig. 10461

Inverted Y Branch

Sizes	Standard	Extra Heavy
2 x 2	1.00	1.25
3 x 2	1.40	1.85
3 x 3	1.40	1.85
4 x 2	1.70	2.15
4 x 3	1.70	2.15
4 x 4	1.70	2.15
5 x 2	2.45	3.05
5 x 3	2.45	3.05
5 x 4	3.10	3.85
5 x 5	3.40	4.60
6 x 2	3.70	4.60
6 x 3	3.70	4.60
6 x 4	4.95	6.15
6 x 5	4.95	6.15
6 x 6	4.95	6.15

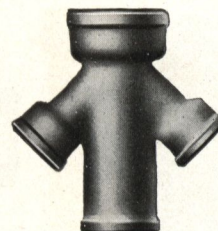


Fig. 10462

Double Inverted Y Branch

Sizes	Standard	Extra Heavy
2 x 2	2.45	3.05
3 x 2	3.10	3.85
3 x 3	3.10	3.85
4 x 2	3.70	4.60
4 x 3	3.70	4.60
4 x 4	3.70	4.60

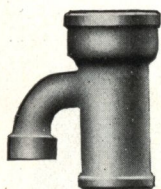


Fig. 10463

Tapped Vent Branch

Sizes	Standard	Extra Heavy
2	1.40	1.70
3	2.00	2.45
4	2.20	2.75
5	2.80	3.50
6	3.40	4.25

Tapped for 1 1/4, 1 1/2 and 2-inch Iron Pipe.

Fig. 10464

Tapped Inverted Y Branch

Sizes	Standard	Extra Heavy
2	1.40	1.70
3	2.00	2.45
4	2.20	2.75
5	2.80	3.50
6	3.40	4.25

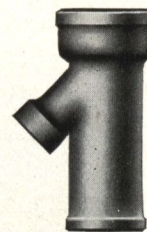


Fig. 10464

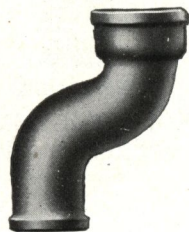


Fig. 10465

Regular Offset

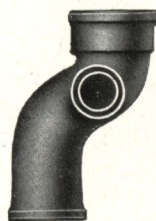


Fig. 10466

Offset with Side Inlet

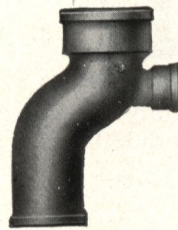


Fig. 10467

Offset with Heel Inlet

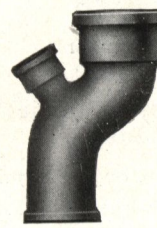


Fig. 10468

Offset with Vent

Fig. 10465

Sizes	Standard								Extra Heavy							
	2	3	4	5	6	7	8		2	3	4	5	6	7	8	
To offset 2 inches	.60	.95	1.00	2.45	3.35	.....	.....		.75	1.15	1.25	3.05	4.15	.....	.....	
To offset 4 inches	.60	1.00	1.00	2.45	3.35	10.10	8.00		.75	1.25	1.25	3.05	4.15	12.60	11.00	
To offset 6 inches	.75	1.10	1.10	2.65	3.35	.....	9.60		.90	1.40	1.40	3.40	4.15	.....	12.00	
To offset 8 inches	.75	1.25	1.25	3.00	3.70	12.30	10.40		.90	1.55	1.55	3.80	4.60	15.40	13.00	
To offset 10 inches	1.00	1.50	1.50	3.50	4.30	.....	.....		1.25	1.85	1.85	4.00	5.40	.....	.....	
To offset 12 inches	1.15	1.65	1.60	3.65	4.95	.....	.....		1.40	2.00	2.00	4.45	6.15	.....	.....	
To offset 14 inches	1.25	1.90	1.90	5.05	6.15	.....	.....		1.55	2.30	2.45	6.30	7.70	.....	.....	
To offset 16 inches	1.35	2.10	2.00	5.35	6.75	.....	.....		1.70	2.60	3.40	6.60	8.30	.....	.....	
To offset 18 inches	1.70	2.30	2.30	5.85	7.10	.....	.....		2.15	2.90	3.55	7.25	8.75	.....	.....	
To offset 20 inches	2.00	2.75	2.60	6.15	7.40	.....	.....		2.45	3.40	4.30	7.55	9.20	.....	.....	
To offset 22 inches	2.20	3.10	3.10	6.30	7.70	.....	.....		2.75	3.85	4.60	7.85	9.65	.....	.....	
To offset 24 inches	2.45	3.70	3.70	6.50	8.10	.....	.....		3.05	4.60	5.05	8.15	10.10	.....	.....	
To offset 26 inches	2.70	4.15	4.35	6.75	8.45	.....	.....		3.35	5.20	5.45	8.45	10.55	.....	.....	

Fig. 10466 Offsets with 2-inch Side Inlet, add to lists of regular Offsets, Fig. 10465. 1.00
 Fig. 10467 Offsets with 2-inch Heel Inlet, add to lists of regular Offsets, Fig. 10465. 1.00
 Fig. 10468 Offsets with 2-inch Vent, add to lists of regular Offsets, Fig. 10465. 1.00

Cast Iron Soil Pipe Fittings

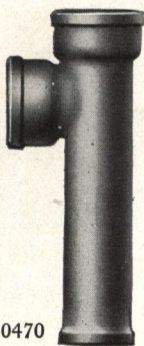


Fig. 10470

Long T Branch

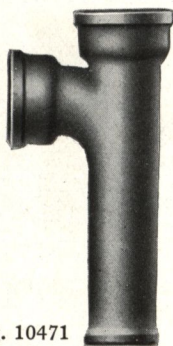


Fig. 10471

Long Sanitary T Branch

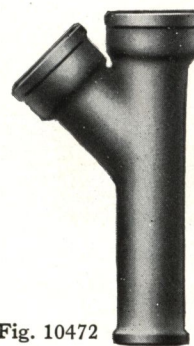


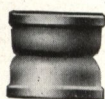
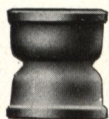
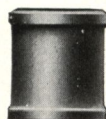
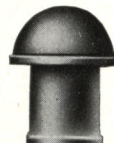
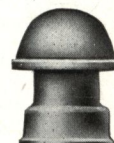
Fig. 10472

Long Y Branch

Figs. 10470-1-2

	Standard	Extra Heavy		Standard	Extra Heavy
Size 2 x 2—12 inches in Clear.....	1.20	1.50	Size 4 x 4—30 inches in Clear.....	4.65	5.85
Size 2 x 2—18 inches in Clear.....	2.00	2.45	Size 4 x 4—36 inches in Clear.....	5.35	6.60
Size 2 x 2—24 inches in Clear.....	2.25	2.75	Size 5 x 5—18 inches in Clear.....	4.20	5.25
Size 3 x 3—12 inches in Clear.....	1.45	1.80	Size 5 x 5—24 inches in Clear.....	4.95	6.15
Size 3 x 3—18 inches in Clear.....	2.60	3.25	Size 5 x 5—30 inches in Clear.....	5.70	7.10
Size 3 x 3—24 inches in Clear.....	3.10	3.85	Size 5 x 5—36 inches in Clear.....	6.60	8.15
Size 3 x 3—30 inches in Clear.....	3.55	4.45	Size 6 x 6—18 inches in Clear.....	4.90	6.15
Size 3 x 3—36 inches in Clear.....	4.05	5.05	Size 6 x 6—24 inches in Clear.....	5.80	7.25
Size 4 x 4—12 inches in Clear.....	2.80	3.50	Size 6 x 6—30 inches in Clear.....	6.80	8.45
Size 4 x 4—18 inches in Clear.....	3.50	4.30	Size 6 x 6—36 inches in Clear.....	7.70	9.55
Size 4 x 4—24 inches in Clear.....	4.10	5.05			

Above Fittings with Reducing Branch take same list as regular.

Fig. 10473
Single HubFig. 10474
Double HubFig. 10475
Straight SleeveFig. 10476
Vent Cap Spigot EndFig. 10477
Vent Cap Hub End

Sizes.....	2	3	4	5	6	7	8	10	12	15
Fig. 10473 Single Hubs.....	.50	.65	.70	1.25	1.85	3.50	2.50	3.90	.....	.....
Fig. 10474 Double Hubs.....	.40	.50	.65	1.00	1.15	3.50	2.50	3.80	5.40	11.90
Fig. 10475 Straight Sleeves.....	.60	.75	.75	1.25	1.85	3.50	2.50	3.80	5.40	.....
Fig. 10476 Vent Cap Spigot End.....	.60	.70	.90	1.85	2.00	.....	.....	.....	.....	.....
Fig. 10477 Vent Cap Hub End.....	1.15	1.20	1.30	2.20	2.60	.....	.....	.....	.....	.....

Sizes.....	2	3	4	5	6	7	8	10	12	15
Fig. 10473 Single Hubs.....	.60	.90	.90	1.55	2.45	4.90	3.50	4.85	.....	.....
Fig. 10474 Double Hubs.....	.45	.75	.75	1.25	1.55	4.90	3.50	4.85	9.20	21.00
Fig. 10475 Straight Sleeves.....	.75	.90	.90	1.55	2.30	4.90	3.50	4.85	9.20	.....
Fig. 10476 Vent Cap Spigot End.....	.75	.85	1.10	2.25	2.50	.....	.....	.....	.....	.....
Fig. 10477 Vent Cap Hub End.....	1.40	1.45	1.55	2.75	3.25	.....	.....	.....	.....	.....

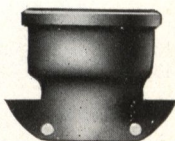


Fig. 10478

T Saddle Hub

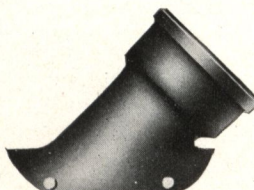


Fig. 10479

Y Saddle Hub

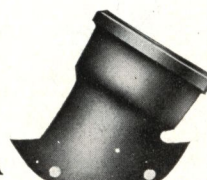


Fig. 10479A

Half Y Saddle Hub

	Standard					Extra Heavy				
Sizes.....	2	3	4	5	6	2	3	4	5	6
Fig. 10478 T Saddle Hub.....	.75	.80	.90	1.00	1.15	.95	1.00	1.10	1.25	1.40
Fig. 10479 Y Saddle Hub.....	.80	.90	.95	1.05	1.25	1.00	1.10	1.15	1.30	1.55
Fig. 10479A Half Y Saddle Hub.....	.80	.90	.95	1.05	1.25	1.00	1.10	1.15	1.30	1.55

Cast Iron Soil Pipe Fittings

Reducers

Spigot End to Govern Price

Fig 10480

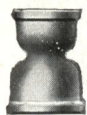


Fig. 10480. Reducer

Sizes.....	3 x 2	4 x 2	4 x 3	5 x 2	5 x 3	5 x 4	6 x 2	6 x 3
Standard.....	.40	.40	.45	.60	.60	.60	.60	.85
Extra Heavy.....	.45	.45	.55	.75	.75	.75	.75	1.00
Sizes.....	6 x 4	6 x 5	7 x 6	8 x 6	10 x 8	12 x 10	15 x 12	
Standard.....	.85	.85	2.45	2.50	4.85	6.75	13.30	
Extra Heavy.....	1.00	1.00	4.55	4.25	6.20	10.80	22.30	

Increaser for Caulking

Hub End to Govern Price

Fig. 10481

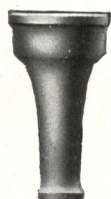


Fig. 10481. Increaser

Sizes.....	2 x 3	2 x 4	2 x 5	2 x 6	3 x 4	3 x 5	3 x 6	4 x 5	4 x 6	4 x 8
Standard.....	.90	.90	1.25	1.85	1.85	1.85	1.85	1.85	1.85	1.85
Extra Heavy.....	1.10	1.10	1.55	2.30	2.30	2.30	2.30	2.30	2.30	2.30
Sizes.....	5 x 6	5 x 8	5 x 10	6 x 7	6 x 8	6 x 10	7 x 8	8 x 10	8 x 12	10 x 12
Standard.....	2.45	2.45	2.65	2.25	2.00	3.40	4.30	4.35	7.35	9.20
Extra Heavy.....	3.05	3.05	3.35	3.85	5.00	4.25	5.40	7.00	9.20	11.50

Increasers Tapped for Iron Pipe

Fig. 10482

Fig. 10482
Tapped Increaser

Sizes.....	1 1/4 x 2	1 1/2 x 2	1 1/2 x 3	1 1/4 x 4	1 1/2 x 4	1 1/2 x 5	2 x 3	2 x 4
Standard.....	.60	.60	1.40	1.50	1.50	2.10	1.40	1.50
Extra Heavy.....	.75	.75	1.70	1.85	1.85	2.45	1.70	1.85
Sizes.....	2 x 5	2 x 6	3 x 4	3 x 5	4 x 5	4 x 6	5 x 6	
Standard.....	2.10	2.40	1.85	2.10	2.50	2.90	3.30	
Extra Heavy.....	2.45	3.00	2.30	2.60	3.10	3.60	4.10	

Short Increaser Tapped for Iron Pipe

Fig. 10483

Fig. 10483
Short Tapped Increaser

Sizes.....	1 1/4 x 2	1 1/2 x 2	1 1/2 x 3	1 1/4 x 4	1 1/2 x 4	1 1/2 x 5	
Standard.....	.75	.75	.90	1.00	1.00	1.25	
Extra Heavy.....	.90	.90	1.10	1.25	1.25	1.55	
Sizes.....	2 x 3	2 x 4	2 x 5	2 x 6	3 x 4	3 x 5	
Standard.....	.90	1.00	1.25	1.85	1.40	1.60	
Extra Heavy.....	1.10	1.25	1.55	2.30	1.75	2.00	

Pipe Rests

Fig. 10484



Fig. 10484. Pipe Rest

Sizes.....	2	3	4	5	6	8	10
Standard.....	.30	.40	.40	.75	.95	1.75	2.15
Extra Heavy.....	.40	.45	.45	.90	1.15	2.25	3.25

Pipe Bands

Fig. 10485

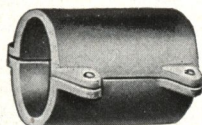


Fig. 10485. Pipe Band

Sizes.....	2	3	4	5	6	
Standard.....	.90	1.00	1.15	1.35	1.60	
Extra Heavy.....	1.10	1.25	1.40	1.70	2.00	

Cast Iron Soil Pipe Fittings—Traps

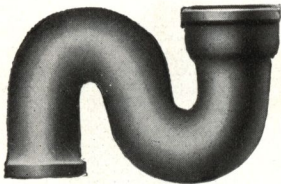


Fig. 10500
S Trap

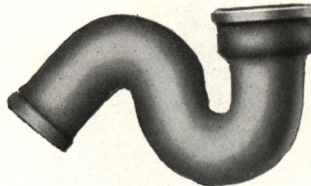


Fig. 10501
Three-quarter S Trap

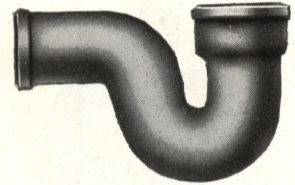


Fig. 10502
Half S or P Trap

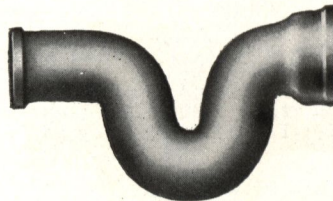


Fig. 10503
Running Trap

Figs. 10500-1-2-3

Sizes.....	2	3	4	5	6	8
Standard.....	.90	1.15	1.50	4.30	4.95	10.00
Extra Heavy.....	1.10	1.40	1.85	5.40	6.15	13.00

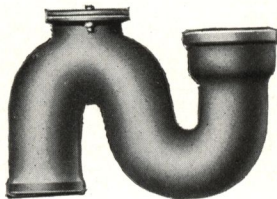


Fig. 10504
S Trap with Hand-hole
and Cover

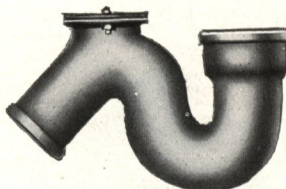


Fig. 10505
Three-quarter S Trap
with Hand-hole and Cover

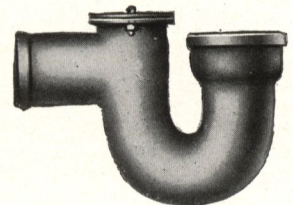


Fig. 10506
Half S or P Trap
with Hand-hole and Cover

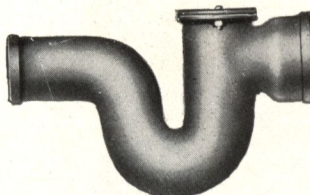


Fig. 10507
Running Trap with Hand-hole and Cover

Figs. 10504-5-6-7

Sizes.....	2	3	4	5	6	8
Standard.....	1.25	1.85	2.50	4.95	5.55	10.75
Extra Heavy.....	1.55	2.30	3.10	6.15	6.90	13.75

Cast Iron Soil Pipe Fittings—Traps



Fig. 10510
S Trap
with Vent

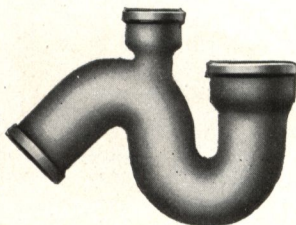


Fig. 10511
Three-quarter S Trap
with Vent

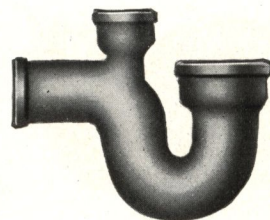


Fig. 10512
Half S or P Trap
with Vent

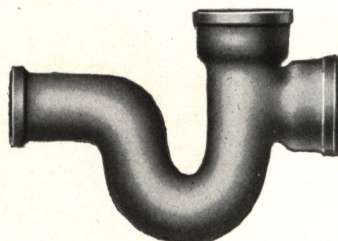


Fig. 10513
Running Trap with Vent

Figs. 10510-11-12-13

	Standard	Extra Heavy		Standard	Extra Heavy
Size 2-inch with 2-inch Vent.....	1.20	1.50	Size 6-inch with 3-inch Vent.....	4.80	6.00
Size 3-inch with 2-inch Vent.....	1.35	1.70	Size 6-inch with 4-inch Vent.....	4.80	6.00
Size 3-inch with 3-inch Vent.....	1.35	1.70	Size 6-inch with 5-inch Vent.....	4.80	6.00
Size 4-inch with 2-inch Vent.....	2.20	2.75	Size 6-inch with 6-inch Vent.....	4.80	6.00
Size 4-inch with 3-inch Vent.....	2.20	2.75	Size 7-inch with 6-inch Vent.....	14.00	16.80
Size 4-inch with 4-inch Vent.....	2.20	2.75	Size 8-inch with 4-inch Vent.....	11.60	14.50
Size 5-inch with 2-inch Vent.....	4.00	5.00	Size 8-inch with 6-inch Vent.....	12.00	15.00
Size 5-inch with 3-inch Vent.....	4.00	5.00	Size 8-inch with 8-inch Vent.....	12.00	15.00
Size 5-inch with 4-inch Vent.....	4.00	5.00	Size 10-inch with 6-inch Vent.....	19.45	25.90
Size 5-inch with 5-inch Vent.....	4.00	5.00	Size 12-inch with 6-inch Vent.....	29.35	36.70
Size 6-inch with 2-inch Vent.....	4.80	6.00	Size 15-inch with 6-inch Vent.....	67.00	84.00

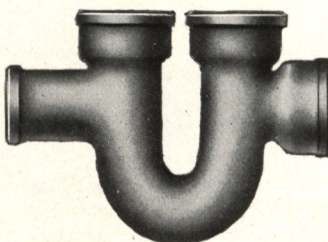


Fig. 10514
Running Trap with Double Vent

	Standard	Extra Heavy		Standard	Extra Heavy
Size 2-inch with Two 2-inch Vents..	1.60	2.00	Size 6-inch with Two 3-inch Vents...	5.60	7.00
Size 3-inch with Two 2-inch Vents..	1.80	2.25	Size 6-inch with Two 4-inch Vents...	5.60	7.00
Size 3-inch with Two 3-inch Vents..	1.80	2.25	Size 6-inch with Two 5-inch Vents...	5.60	7.00
Size 4-inch with Two 2-inch Vents..	2.60	3.25	Size 6-inch with Two 6-inch Vents...	5.60	7.00
Size 4-inch with Two 3-inch Vents..	2.60	3.25	Size 7-inch with Two 6-inch Vents...	16.80	19.60
Size 4-inch with Two 4-inch Vents..	2.60	3.25	Size 8-inch with Two 4-inch Vents...	12.80	16.00
Size 5-inch with Two 2-inch Vents..	4.80	6.00	Size 8-inch with Two 6-inch Vents...	14.00	17.00
Size 5-inch with Two 3-inch Vents..	4.80	6.00	Size 8-inch with Two 8-inch Vents...	14.00	17.00
Size 5-inch with Two 4-inch Vents..	4.80	6.00	Size 10-inch with Two 6-inch Vents..	21.60	28.10
Size 5-inch with Two 5-inch Vents..	4.80	6.00	Size 12-inch with Two 6-inch Vents..	29.35	36.70
Size 6-inch with Two 2-inch Vents..	5.60	7.00	Size 12-inch with Two 8-inch Vents..	31.10	38.90

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